THE LANCET

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

Telegrams—LANCET, WESTRAND LONDON. *Telephone*—TEMPLE BAR 7228 & 7229. *Offices*—7, Adam Street, Adelphi, W.C.2

No. XXIII. OF Vol. II., 1929. LONDON, SATURDAY, DECEMBER 7, 1929 Pp. 136—Price 1s.
No. 5545. Vol. CCXVII. Founded 1823. Registered as a Newspaper. Published Weekly. Annual Subscription Inland £2 2s. Abroad £2 10s.

OXFORD MEDICAL PUBLICATIONS.

SEE PAGE 2.

BY LIEUT.-COL. ROBERT HENRY ELLIOT,

M.D., B.S. Lond., F.R.C.S Eng., I.M.S., retd.

A TREATISE ON GLAUCOMA.
2nd Edition, Revised and Enlarged. 30s. net.

TROPICAL OPHTHALMOLOGY.
With 7 Plates and 117 Illustrations. 31s. 6d. net.
Spanish and French Editions, 1922. Full German Abstract.

THE CARE OF EYE CASES: 12s. 6d. net.
A MANUAL FOR NURSES, PRACTITIONERS, AND STUDENTS.
Chinese Edition. Oxford University Press.

GLAUCOMA 4s. net.
A HANDBOOK FOR THE GENERAL PRACTITIONER.

THE INDIAN OPERATION OF COUCHING FOR CATARACT.
7s. 6d. net. H. K. Lewis and Co. Ltd.

SECOND ENLARGED EDITION. With an additional plate at 15s. net; post free, inland 15s. 9d., abroad 16s. 6d.

CONTRACEPTION

ITS THEORY, HISTORY AND PRACTICE.
A Manual for the Medical and Legal Professions and all Social Workers.
By MARIE CARMICHAEL STOPES, D.Sc.,
Fellow of University College, London.
Introduction by the late Prof. Sir WILLIAM BAYLISS, F.R.S.
Introductory Notes by Sir JAMES BARR, M.D., Dr. C. ROLLESTON, Dr. JANE HAWTHORNE, and "Obscurus."
A few press opinions of the 1st Edition:
MEDICAL TIMES.—"The book is unique and marks a new era."
THE LANCET.—"Much of the evidence contained in the book is quite unobtainable elsewhere."
Sir Archdall Reid in NATURE.—"Some such book as this had to be written, and this is very well written."
MED. REV.—"Should be read by all interested in racial welfare." This book is the first manual on the subject, and is packed with both helpful and interesting matter and much that is new and noteworthy.
London: John Bale, Sons & Danielsson, Limited, 83-91, Great Titchfield-street, Oxford-street, W. 1.

THE CASE OF MISS R.

By ALFRED ADLER.
Translated by E. and F. JENSEN, M.D. 12s. 6d.
Doctors should read this interpretation by the great Viennese psychologist of a young girl's life-story, told in her own actual words; it will help them to detect and deal with the psychological peculiarities of their patients.
George Allen & Unwin, Ltd., London, W.C.1.

NOW READY. 4/6 net.
THE TREATMENT OF

CHRONIC DEAFNESS.

BY THE ELECTROPHONOIDE METHOD OF ZUND-BURGUET.
By GEORGE C. CATHCART, M.A., M.D.,
Consulting Surgeon to the Throat Hospital, Golden-square.
Oxford University Press, Amen House, London, E.C.4.

THE TONGUE AND ITS DISEASES.

By DUNCAN C. L. FITZWILLIAMS, C.M.G., M.D., Ch.M., F.R.C.S.
Pp. xvi., 505.
Illustrated. Price 36s. net.
"It is destined to become a standard work of reference."—BRIT. MEDICO-CHIRURGICAL JNL.
Oxford University Press, Amen House, London, E.C.4.

METHODS AND USES OF

HYPNOSIS AND SELF-HYPNOSIS.

By BERNARD HOLLANDER, M.D. 6s.
DR. Hollander's new book is the result of thirty years' experience of experimental hypnosis and hypnotic treatment, and contains directions how to apply hypnotism for the treatment of functional nervous and mental disorders and moral failings, as well as a survey of all that is scientifically known of this form of psychotherapy.
By the same author:
THE PSYCHOLOGY OF MISCONDUCT, VICE, AND CRIME.
Third Impression. 7s. 6d. net.
Geo. Allen & Unwin, Museum Street, London, W.C.1.

LEWIS'S CIRCULATING LIBRARY.

All Branches of Medical and Scientific Literature.

NEW BOOKS ALWAYS AVAILABLE
ON ALL SUBJECTS FOR THE MEDICAL PRACTITIONER OR SPECIALIST.
READING ROOM FOR SUBSCRIBERS. OPEN DAILY.
An Annual Subscription of One Guinea will enable you to see new books reviewed or advertised in the scientific papers.
WRITE for particulars NOW.
H. K. Lewis & Co. Ltd., 136 Gower-street, London, W.C. 1.

H. WANSEY BAYLY'S

VENEREAL DISEASE,

ITS PREVENTION, SYMPTOMS AND TREATMENT.
3rd EDITION 1927 - REPRINTED 1929.
Faber & Faber, London. F. A. Davis Co., Philadelphia.
Butterworth & Co., Calcutta and Sydney.

OPERATIVE CYSTOSCOPY.

By E. CANNY RYALL, F.R.C.S.
Royal 4to. 294 pages, with 115 full-page plates. Buckram.
Price 70s. net (postage 1s. 3d.)
Henry Kimpton, 263, High Holborn, London, W.C. 1.

BY J. F. HALLS DALLY, M.A., M.D.

Cantab., M.R.C.P., Physician to Mount Vernon Hospital.

HIGH BLOOD PRESSURE
A Manual for Practitioners. Illustrated
Second Edition, Revised and Enlarged. 12s. 6d. net.
LANCET.—"A useful summary of our knowledge on a subject of ever-increasing importance."

LOW BLOOD PRESSURE
Its Causes and Significance. Illustrated. 15s. net.
JOURNAL MEDICAL ASSOCIATION OF S. AFRICA.—"Up to date the most notable contribution on low blood pressure."
Wm. Heinemann (Medical Books), Ltd., 99, Great Russell St., W.C.1.

DISEASES OF THE RECTUM AND COLON

AND THEIR SURGICAL TREATMENT.
BY
J. P. LOCKHART-MUMMERY,
F.R.C.S.ENG., M.A., M.B., B.C.CANTAB.,
Senior Surgeon to St. Mark's Hospital.
Over Two Hundred Plates and Illustrations. Price 25s.

Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

THE INTERNAL SECRETIONS OF THE OVARY.

By A. S. PARKES, M.A., Ph.D., D.Sc., Department of Physiology and Biochemistry, University College, London.
With Illustrations. 8vo. 21s. net.

Longmans, Green & Co., Ltd.,
39, Paternoster-row, London, E.C.4.

With 25 Illustrations, including 17 Plates. Demy 8vo.
9s. net; postage 5d.

STERILITY IN WOMEN

DIAGNOSIS AND TREATMENT.
By SIDNEY FORSDIKE, M.D., B.S. (Lond.), F.R.C.S., Surgeon to the Hospital for Women, Soho Square, London, &c.
"Shows . . . evidence of rich personal experience; will well repay the most careful study."—THE LANCET.
London: H. K. Lewis & Co. Ltd., 136 Gower-street, W.C.1.

Price 1s. each (6s. per dozen).

A DIET SUMMARY IN AVERAGE SERVINGS FOR DIABETICS

and others suffering from Disorders of Metabolism.
By P. J. CAMMIDGE, M.D.
"Carefully compiled . . . should prove of real value . . . may be warmly recommended."—LANCET.
Baillière, Tindall & Cox, 7 & 8, Henrietta Street, London, W.C.2.

FIFTH EDITION. Pp. v.+251. With Coloured Plate and 92 other Illustrations. Price 8s. 6d. Postage 6d.

REFRACTION OF THE EYE.

By ERNEST CLARKE, C.V.O., M.D., F.R.C.S.
The simplest book on Refraction, especially written for the General Practitioner.
"Can be recommended to the student as the very best on its subject."—BRITISH MEDICAL JOURNAL.
Baillière, Tindall & Cox, 7 & 8, Henrietta-street, London, W.C.2

An Income of £400 a year

and a cash payment when you retire

THAT is what a man aged 30 next birthday may secure by taking out an Endowment Assurance Guaranteed Bonus Policy with the Prudential.

The annual premium would be £70 : 16 : 8 but allowing for Income-Tax rebate at 2s. in the £1, and assuming that the rate and conditions of rebate remain unchanged,

THE YEARLY OUTLAY WOULD BE

£63 : 15 : 0

and in the event of death before 65, £2,000 *plus guaranteed Bonus Additions of* £60 a year (almost as much as the yearly outlay) would be available for his dependants.

If you would like a Guaranteed Income of £400 a year at age 65, or earlier, fill in and forward this coupon.

To the
PRUDENTIAL ASSURANCE COMPANY LTD.,
Holborn Bars, E.C. 1.

Please send me particulars of an Endowment Assurance Policy with Guaranteed £3% Bonus which will enable me to secure an income of £.....at age.....
My age next birthday is.....

Name.....
(Mr., Mrs., Miss)
Address.....
.....

L.T. 7.12.29. P.P.197-400.

THE LANCET

No. 5545. LONDON, SATURDAY, DECEMBER 7, 1929. CCXVII.

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

AN ADDRESS on Intrathoracic and Pulmonary New Growths. By MAURICE DAVIDSON F.R.C.P.—(*Illustrated*). 1181

ORIGINAL ARTICLES.

An Electrocardiographic Study of the Human Heart During and After Nitrous Oxide Anæsthesia. By G. E. S. WARD, F.R.C.P., and SAMSON WRIGHT, M.R.C.P.—(*Illustrated*). 1184

Asthma in Children: Sugar in Prevention and Treatment. With Note on Infantile Eczema. By A. ARNOLD OSMAN, M.R.C.P. 1187

Emotion and Acute Glaucoma. By W. S. INMAN, M.B. 1188

CLINICAL AND LABORATORY NOTES.

Kienböck's Disease. By E. W. RICHES, F.R.C.S. 1189

Meningo-encephalitis following German Measles. By J. H. E. BROCK, M.D. 1190

GENERAL MEDICAL COUNCIL.

Penal Cases: Dental and Medical—(*To be continued*)..... 1191

MEDICAL SOCIETIES.

Medical Society for the Study of Venereal Diseases: Urinary Excretion of Novarsenobillon in Syphilis..... 1197

Joint Tuberculosis Council 1199

REVIEWS AND NOTICES OF BOOKS.

Practical Local Anæsthesia: Its Surgical Technique. By R. E. Farr, M.D., F.A.C.S... 1199

Beiträge zur Practischen Chirurgie. By Dr. Albert Krecke 1199

Elements of Hygiene and Public Health. By J. P. Modi, L.R.C.P. 1200

Pelades et alopécies en aires. By Dr. R. Sabouraud 1200

Pharmaceutical Therapeutics, with Pharmacology, Posology, and Toxicology. By Prof. Eldin V. Lynn, Ph.D. 1200

Theoretische und Klinische Pharmakologie. By Prof. H. V. Hoesslin und Prof. Franz Müller 1200

LEADING ARTICLES.

AMENDMENT OF THE LUNACY ACTS 1201

OPERATION FOR DETACHMENT OF THE RETINA.. 1202

SOME EFFECTS OF MUSCULAR EXERCISE 1203

ANNOTATIONS.

St. Bartholomew's Hospital Appeals 1204

Pasteurisation as a Makeshift 1205

Obscure Fevers of the Tropics 1205

Should the Guardians be Told? 1206

Medical Practice by Foreigners in Great Britain and Ireland.... 1206

Carbon Monoxide Poisoning 1207

Drainage after Cholecystectomy 1207

The Drug Traffic 1208

Traumatic Occlusion 1208

The Distribution of Sickness 1208

The Rockefeller Foundation 1209

CLINICAL INTERPRETATION OF AIDS TO DIAGNOSIS.

Interpretation of Radiograms of the Alimentary Tract. II.—Stomach. By A. E. BARCLAY, M.D.—(*Illustrated*) 1210

SPECIAL ARTICLES.

Some Observations on Scandinavian Surgery. I.—Use of Radium and X Rays at Radiumhemmet, Stockholm. By T. HOLMES SELLORS, B.M. 1214

The Medical Uses of Radium 1216

Medicine and the Law. Osteopathic Treatment Censured at Inquest... 1217

Paris: The Medical Life of Clemenceau 1218

Budapest: Poisoning with Nitric Acid Fumes.... 1218

Infectious Disease in England and Wales .. 1224

CORRESPONDENCE.

Use of the Term "Gastroptosis" (Dr. Geoffrey Evans) 1219

Clinics for Rheumatic Children (Dr. James Burnet) 1219

Irradiated Milk *v.* Cod-liver Oil for Rickets (Dr. Chalmers Watson and Dr. Frank Bodman) .. 1220

The Craft of Surgery (Dr. W. B. Cosens) 1220

Avertin Anæsthesia (Mr. Basil Hughes) 1220

The Purchase of Dangerous Drugs (Dr. W. S. Hall) 1221

Contractility of Capillaries (Dr. James M. McQueen) 1221

Diagnosis of Gastric Disease (Dr. J. A. Ryle) 1221

G.M.C. Election (Dr. Arthur Haydon) 1221

Royal Medical Benevolent Fund (Mr. E. C. Pennefather)..... 1221

Electrical Treatments in Acute Conditions (Dr. C. B. Heald) 1222

A White Black-board for the Operating Theatre (Prof. A. K. Henry) .. 1222

Regimental Colours of the Indian Army (Capt. H. Bullock) 1238

OBITUARY.

Sir Arthur Sloggett, F.R.C.S.—(*Portrait*) .. 1222

Sir John Alexander Cockburn, M.D. 1223

Arthur Templer Davies, F.R.C.P.—(*Portrait*) .. 1223

Lieut.-Colonel Arthur Mercer Davies, M.R.C.S. 1224

Geoffrey Lucas, M.D..... 1224

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: Children and Young Persons (Employment and Protection) Bill.—Expenditure in Pauper Lunatics 1225

House of Lords: Mental Treatment Bill 1225

House of Commons: Health of Public Aircraft Pilots.—Deaths from Silicosis in Sheffield.—Prison Doctors and Infliction of the Cat.—Inspection of Vivisection Experiments.—Women Medical Officers in Prisons 1232

THE SERVICES.

Royal Naval Medical Service.—Army Medical Services.—Royal Army Medical Corps.—Royal Air Force.—Deaths in the Services 1234

MEDICAL NEWS.

University of Oxford: Radcliffe Travelling Fellowship 1234

University of Cambridge. 1234

University of London.... 1234

Society of Apothecaries .. 1234

A Medical Master of the Haberdashers' Company 1214

East Ham Isolation Hospital 1216

Torbay Hospital Contributory Scheme 1218

Poplar Hosp. for Accidents 1234

Ross Award Fund 1234

Royal Institute of Public Health 1234

Orthopædic Hospitals ... 1234

Walsall General Hospital. 1235

Bristol Hospital for Children and Women 1235

Enlargement of Worthing Hospital 1235

St. Bartholomew's Hospital, Rochester 1235

Dental Hospital of Ireland 1235

Manchester Students' Rag 1235

University of Liverpool.. 1235

Donations and Bequests.. 1235

Stockport Infirmary 1235

Bradford Municipal Hosp. 1235

NOTES, COMMENTS, AND ABSTRACTS.

The Mecca Pilgrimage, 1929 1237

Enlargement of a Dublin Hospital 1238

Medical Progress in Ceylon..... 1238

Royal Samaritan Hospital for Women, Glasgow .. 1238

Medical Diary 1235

Appointments—Vacancies 1236

Births, Marriages, Deaths 1237

NEW CALCIUM THERAPY

Calcium-Sandoz

For oral, intramuscular or intravenous use

COMBINES INTENSE THERAPEUTIC ACTION WITH PERFECT TOLERANCE

AMPOULES — TABLETS — POWDER

SANDOZ CHEMICAL WORKS, 5, Wigmore Street, London, W.1

OXFORD MEDICAL PUBLICATIONS

A TEXT-BOOK OF THE PRACTICE OF MEDICINE

By various Authors.

Edited by **FREDERICK W. PRICE**, M.D., F.R.S.(Edin.).

No introduction is required for this standard work, the reputation of which is established equally with the medical practitioner, the student, and the teacher. Its deserved popularity cannot but be extended by the present issue, incorporating as it does the most recent information on subjects covered by more than a thousand references.

3rd Edition. Pp. 1920. 114 Illustrations. 36s. net.

MAMMALIAN PHYSIOLOGY (2nd Ed.).
By **E. G. T. LIDDELL**, D.M., and **Sir CHARLES SHERRINGTON**, O.M., M.D., D.Sc., F.R.S. Pp. 172. 9 Plates. 50 Illus. .. .. NET. **15s.**

EXPERIMENTS AND OBSERVATIONS ON THE GASTRIC JUICE AND THE PHYSIOLOGY OF DIGESTION.
By **WILLIAM BEAUMONT**, M.D. (Facsimile of 1833 edition). Pp. 320. Illustrated .. .. **12s. 6d.**

GASTRIC FUNCTION IN HEALTH AND DISEASE.
By **JOHN A. RYLE**, M.D. (Lond.), F.R.C.P. Pp. 152. Illustrated by Charts .. .. .. **8s. 6d.**

GASTRIC AND DUODENAL ULCER.
By **ARTHUR F. HURST**, M.A., M.D., F.R.C.P., and **MATTHEW J. STEWART**, M.D., F.R.C.P.; with the co-operation in the Radiological Section of **P. J. BRIGGS**, M.A., M.R.C.S., L.R.C.P. Pp. 562. 279 Illus. 10 Col. Plates .. .. **63s.**

ANATOMY AND PHYSIOLOGY OF CAPILLARIES (2nd Ed.).
By **AUGUST KROGH.** Pp. 436. 101 Illus. .. **18s.**

CARDIAC ARRHYTHMIAS.
By **IRVING R. ROTH**, M.D. Pp. 227. 71 Illus. **36s.**

AN INTRODUCTION TO THE STUDY OF PHYSIC. NET.
By **WILLIAM HEBERDEN** (Now for the first time published). Pp. 170. Illustrated .. .. .. **10s.**

AN INTRODUCTION TO PHARMACOLOGY AND THERAPEUTICS.
By **J. A. GUNN**, M.D., D.Sc., M.A. Pp. 220 .. **5s.**

COMMON INFECTIONS of the FEMALE URETHRA AND CERVIX (2nd Ed.).
By **FRANK KIDD**, B.A., M.B., F.R.C.S., L.R.C.P., and **A. MALCOLM SIMPSON**, B.A., M.B., D.P.H.; with additional chapters by GEORGE T. WESTERN, M.D., and M. S. MAYOU, F.R.C.S. Pp. 209. 14 Illus. **8s. 6d.**

THE PRACTICE OF UROLOGY AND SYPHILOLOGY (4th Ed.).
By **CHARLES H. CHETWOOD**, M.D., LL.D., F.A.C.S. Pp. 892. 314 Illus. 11 Plates .. .. **42s.**

NAVAL HYGIENE.
By **THOMAS BROWN SHAW**, M.B., Ch.B. Pp. 379. 24 Illus. .. .. **21s.**

THE WORK OF MEDICAL WOMEN IN INDIA.
By **MARGARET I. BALFOUR**, C.B.E., M.B., C.M., and **RUTH YOUNG**, M.B.E., B.Sc., M.B., Ch.B. Pp. 215. 5 Plates. 1 Map .. .. **9s.**

COMPLETE CATALOGUE SENT ON REQUEST.

Oxford University Press

HUMPHREY MILFORD. **Dept. "R," Falcon Square, London, E.C. 1.**

Telephone: NATIONAL 2354. *Telegrams:* OXUNIPRES, CENT, LONDON.

An Address
ON
INTRATHORACIC AND PULMONARY NEW GROWTHS.

*Delivered at the University of Sheffield on Dec. 3rd, 1929,**

BY MAURICE DAVIDSON, M.D. OXF., F.R.C.P. LOND.,
PHYSICIAN AND DEAN OF THE MEDICAL SCHOOL, BROMPTON HOSPITAL, LONDON.

IN common with many of my colleagues I have been greatly impressed with the apparent increase during recent years in the number of cases of primary malignant disease of the lung which present themselves both in hospital and in private practice.

The appearance of cancer in the lungs in the form of secondary or metastatic deposits from tumours originating in other portions of the body is, of course, well known and calls for no special comment. The occurrence of primary growths in connexion with the lungs or bronchi has hitherto been regarded as a rarity. That the increased frequency of pulmonary carcinoma is real and not merely apparent is a fact of which I have not the slightest doubt. It has been borne in upon me by the clinical impressions of the last ten years and I know that a similar view is held by many competent observers who are in a position to form a judgment. Such a statement, however, demands at least some sort of proof, and I have, therefore, endeavoured to collect a few of the more reliable statistical observations to put forward as a basis for my contention.

A short reference to the literature of this subject may be useful, since it has now grown to such considerable dimensions. An admirable general account is given by Huguenin[1] in his recent book which includes an interesting résumé of the historical side. Of the principal authors in the last 50 years he quotes especially Fuchs and Pässler, who in 1896 collected together as many as 76 cases. In 1912, Adler[2] wrote a long treatise which has long been regarded as one of the classical sources of information. The names of Ménétrier[3] and Letulle[4] in France are specially mentioned as being always associated with the problem of pulmonary cancer. For a summary of the main pathological and statistical data reference may be made to Ewing[5] and for morbid histology to MacCallum's well-known text-book.[6] It is mainly since the war that the subject has come into great prominence, and most of the recent literature of importance is from Germany and America. Some of the most convincing evidence is summarised in Tables I. to III. and in the illustration.

TABLE I.—*Incidence of Pulmonary Cancer.*

(Figures quoted from Huguenin.)

Autopsies—number of.	Pulmonary cancer—cases of.	Author and dates.
11,400	40	Wolff.
21,000	17	Fuchs (1854 to 1896).
7,006	6	Norwiski (Lemberg) (1886 to 1903).
16,047	61	Lavrinovic (Petrograd) (1905 to 1914).

Compare with the above figures those of Berblinger (Jena) in regard to 8056 autopsies performed between 1910 and 1924. Of these 5773 were on persons over 20 years of age. Of the latter 987 had died of cancer (i.e., 17·1 per cent.). Forty-one of these cancers were primary growths of lung—i.e., 4·2 per cent. of all the cancers.

* Under the joint auspices of the Yorkshire Council of the British Empire Cancer Campaign and the Clinical Medical Studies Committee of the University of Sheffield.

Table I. giving some of the earlier statistics and Table III. giving later figures, are quoted by Huguenin, and so striking are the details that I have thought it well worth while to reproduce them. Table II. and the figure are taken from a very instructive paper by Hanf[7] whose figures are based entirely on post-

TABLE II.

Year.	Total autopsies.	Over age 20.	Cancer. Total.	Cancer. % of autopsies.	Cancer of the lung. Total.	Male.	Female.	% of autopsies.	% of autopsies over 20 years of age.	% of cancers.	Average age.
1903	1272	944	80	6·3	3	2	1	0·2	0·3	3·7	62·3
1904	1408	948	95	6·7	4	3	1	0·3	0·4	4·2	67·7
1905	1328	959	135	10·2	1	1	—	0·08	0·1	0·7	74·0
1906	1324	941	113	8·5	5	5	—	0·4	0·5	4·4	54·0
1907	1364	843	150	11·0	6	6	—	0·4	0·7	4·0	55·3
1908	1356	762	112	8·3	4	3	1	0·3	0·5	3·6	61·5
1909	1480	671	141	9·5	6	6	—	0·4	0·9	4·3	61·5
1910	1422	688	136	9·6	10	9	1	0·7	1·5	7·3	54·0
1911	1419	763	139	9·8	9	7	2	0·6	1·2	6·5	54·7
1912	1431	768	134	9·4	6	3	3	0·4	0·8	4·5	49·7
1913	1348	731	203	15·3	6	3	3	0·4	0·8	3·0	49·8
1914	1257	692	170	13·5	8	6	2	0·6	1·2	4·7	47·6
1915	1042	657	154	14·8	8	8	—	0·8	1·2	5·2	60·4
1916	974	612	160	16·4	4	3	1	0·4	0·7	2·5	57·8
1917	1060	716	152	14·3	6	5	1	0·6	0·8	3·9	46·5
1918	1278	612	217	17·0	8	8	—	0·6	1·3	3·7	52·9
1919	1309	799	218	16·7	12	9	2(1?)	0·9	1·5	5·5	51·9
1920	1506	851	209	13·9	7	6	1	0·5	0·8	3·3	50·4
1921	1367	794	241	17·8	15	12	3	1·1	1·9	6·2	53·9
1922	1400	808	246	17·6	18	15	3	1·3	2·4	7·3	48·4
1923	1317	755	222	16·9	20	18	2	1·5	2·6	9·0	47·0
1924	1281	783	229	17·9	13	11	2	1·0	1·7	5·7	58·2
1925	1437	875	265	18·5	21	17	3(1?)	1·5	2·4	7·9	50·4

Statistics of cancer of the lung at the Charité Hospital, Berlin, from 1903 to 1925 (Dr. D. Hanf).

mortem records, as indeed are the Jena statistics and other recent observations. Hanf observes that an increase in lung cancer might be accounted for by fluctuations of the yearly post-mortems, or of the relative reduced post-mortems, and also by an increase in cancer generally. She seems to think that

TABLE III.—*Proportion of Lung Cancer to Total Cancer.*

(Showing Increase in Recent Years.)

		Per cent.		Total cancers.
Jena statistics	1910 to 1914	= 2·2	Pulm.	363
	1915 to 1919	= 2·9	,,	337
	1920 to 1924	= 8·3	,,	287
Basle (Stachelin)	Before 1906	= 1·76		
	1906 to 1914	= 2·9		
	1914 to 1924	= 5·0		
Berlin (Wahl)	1917 to 1922	= 6·0		
	1922 to 1927	= 13·0		
Zürich (Probst)	1906 to 1910	= 1·13		
	1911 to 1915	= 3·34		
	1916 to 1920	= 6·12		
	1921 to 1925	= 7·17		
	1926	= 7·56		

yearly fluctuations of post-mortems is an important point and remarks that very critical examination of figures is essential in this question. It appears, however, undeniable that the figures based on the percentage of total cancer cases have risen considerably and that this is definite evidence of the increase in lung cancer not only absolutely but relatively.

ÆTIOLOGY AND PATHOLOGY.

There are, so far as I can determine, no facts of which we are at present aware which would indicate to us definitely any peculiar ætiology in the case of pulmonary cancer as distinct from that of cancer generally. The average age of incidence appears to be round about 50, and all statistics agree that males suffer much more than females. As regards race, Huguenin points out that the condition is less frequent in coloured races than among whites, and quotes an

interesting observation by the chief of the Jewish Hospital in New York, who states that the number of cases of pulmonary cancer in his own clinic (that is, among Jews) is much greater than in other hospitals in that city.

I do not propose to attempt a detailed consideration of the morbid histology of these growths. It is sufficient for my present purpose to say that tumours of all descriptions are met with in the thorax, both benign and malignant. Of the benign growths, fibromata may be mentioned and together with these may be considered teratomata, dermoids, and some of the tumours of low malignancy such as chondro-sarcomata and myelomata. Of the malignant growths, the carcinomata are probably the most frequent, usually squamous-celled or columnar, though almost any histological variation may be found. Sarcoma is met with in younger subjects, and different varieties of endotheliomata are found at varying periods of life. I think it fair to mention Hodgkin's disease, or to use a more recent term lymphogranuloma, since, although it is not usually placed in the same pathological category with carcinoma or sarcoma, and whatever be its pathogenesis, in its clinical manifestations within the thorax it behaves very like a neoplasm.

A good deal of discussion has taken place as to the site of origin of the various growths found in the lungs and mediastinum, but I do not intend to enter into detail on this difficult question. Masses of growth which are found to invade the entire substance of a lung are often spoken of as primary carcinoma of the lung, but there is, I think, a general consensus of opinion that they originate primarily in the bronchial mucosa, and that the appearance of squamous-celled cancer in this situation may be explained by the occurrence of metaplasia.

It is mainly with the clinical side of this subject that I am concerned and with the problem that is presented to us at the bedside or in the consulting-room; my chief object is to summarise the important points in the differential diagnosis of these growths, and to give a practical account of the modern methods of investigation and treatment which represent the advances of the last few years.

Clinical Aspects.

The diagnosis of pulmonary or of mediastinal new growth is by no means always easy. Occasionally it is obvious; at other times we are confronted with a difficult problem, the solution of which involves a great deal of patient investigation and the employment of a combination of methods in a careful system of team-work. In drawing up a routine scheme for the complete investigation of a patient I should include the following points in order of sequence: (1) history and symptomatology; (2) physical examination of the chest; (3) radiographic examination by the usual methods; (4) radiographic examination in association with artificial pneumothorax, or with lipiodol injection, or both; (5) bronchoscopy; (6) thoracoscopy; (7) exploratory thoracotomy.

History and Symptomatology.

As in other diseases, a detailed history is of primary importance. The interpretation of symptoms and the estimation of their relative importance is, of course, a matter of clinical experience, but from the practical point of view I think that cases of intrathoracic growths may conveniently be classified into certain broad groups.

(*a*) Patients who present themselves in the first place with evidence of a *pleural effusion*. Sometimes this is the first and only manifestation of disease, the patient having had no previous trouble of which he was aware. As clinical experience has taught us that tuberculosis is by far the commonest cause of a sterile pleural effusion in a young adult, so I think in older persons the existence of a pleural effusion for which an infective cause cannot obviously be discovered should always raise the gravest suspicion of the presence of new growth within the chest, and if the fluid be uniformly blood-stained the suspicion may almost amount to a certainty. It has been stated by competent observers that the causes of sanguineous pleural effusions are the same as those of other pleural effusions and even that they may be due to tuberculosis, but to this I cannot subscribe, so far as my own experience goes. While it must be admitted that other causes must be sought for I am prepared to say that I have not seen a uniformly blood-stained pleural effusion which was not due to new growth.

(*b*) Patients who seek advice on account of *hæmoptysis*. Apart from the occurrence of hæmoptysis as a recognised incident in the clinical history of bronchial or pulmonary growths at any stage, there are numerous examples in which this has been the only initial symptom, and in any investigation of hæmoptysis of uncertain origin the question of growth must always be borne in mind. I have described interesting and difficult examples of this in THE LANCET and elsewhere.[8]

(*c*) Patients who are admitted for investigation whose history and physical examination suggest the presence of *localised infection* within the chest. In some of these diagnosis is extremely difficult. Both the physical signs and the radiological examination suggest the possible existence of an interlobar empyema or of a localised pulmonary abscess, and the suspicion as to the presence of pus is further increased by the state of the temperature chart, the character of the sputum, the increased leucocyte count, and the general toxic appearance of the patient. In some cases exploration has been carried out, and even where pus has been aspirated, the real cause of the toxæmia—viz., a breaking down neoplasm—has only been established post mortem.

(*d*) Finally, one has to consider those cases which do not fall into any of the foregoing three categories, but which comprise patients who seek advice for a variety of symptoms referable to the chest, but in whom the diagnosis is not obvious on ordinary clinical examination. It is of these especially that I wish to say a few words in connexion with the general symptomatology of thoracic neoplasms, and this for the reason that the frequency with which they have appeared in the ordinary routine of out-patient work at the Brompton Hospital has increased so amazingly in the last few years that some of us have come to regard with a certain instinctive preconception almost every bronchitic patient of middle age whose symptoms and general clinical condition appear to be incommensurate with the physical signs present on examination.

Of the various symptoms which are commonly present I am inclined to regard *dyspnœa* as the most important. While it is often aggravated by exertion, this is by no means always the case. Of the dyspnœa which accompanies new growths of the lung (apart from the presence of pleural effusion) I should say that its chief characteristics are its constancy, its tendency, especially in the later stages, to be paroxysmal in type, occurring at intervals without any apparent reason, and the fact that it is often out of all proportion to the extent of lung involved and consequently to the intensity of the physical signs. These are points in the history of the case on which stress may be laid when one is considering the differential diagnosis in a patient who has been treated for some common chest complaint and who has not responded to treatment.

Cough and expectoration are usually present, with occasional streaky hæmoptysis, but these symptoms do not as a rule differ much as regards their characteristics in new growth as compared with other diseases of the lung. The amount of sputum is largely a question of the extent to which the lung has been affected and has begun to break down in consequence of secondary sepsis. *Pain* is a variable symptom, and if the pleura is involved, may be very distressing, but on the whole my impression has been that in the majority of instances cancer of the lung, like cancer in other parts of the body, is in its earlier stages a relatively painless disease, although the incidence of pain must obviously depend largely on the site of the lesion and the extent to which it involves the sensory nerves. Severe pain due to erosion of bone and accompanied by other

evidences of pressure is more likely to be met with in growths of the mediastinum than in bronchial or pulmonary lesions. *General weakness* is usually complained of, but loss of weight, though of great importance in differential diagnosis, is by no means a constant symptom, and the general nutrition and healthy appearance of some patients who are known to have an intrathoracic growth is occasionally a remarkable feature. A point in the history which is worth noting is the frequency with which the patient will mention an attack of so-called influenza, from which he will often date the onset of his more obvious feeling of ill-health. I have mentioned the word influenza because this is the expression most commonly used by patients themselves, but occasionally there will be a history of pneumonia or possibly bronchitis. The explanation, I believe, is that in the very early stages pulmonary cancer is, like many other cancers, symptomless; at a certain period in the development of the disease the involvement of lung tissue results in a definite reaction of some sort within the body—in many cases owing to secondary infection—and this is interpreted in terms of its more superficial manifestations, the true underlying cause being unrecognised. I think that it is at this stage that the cardiac displacement seen so often in the radiographic appearances takes place; but this is a point of conjecture and one which it is difficult to establish.

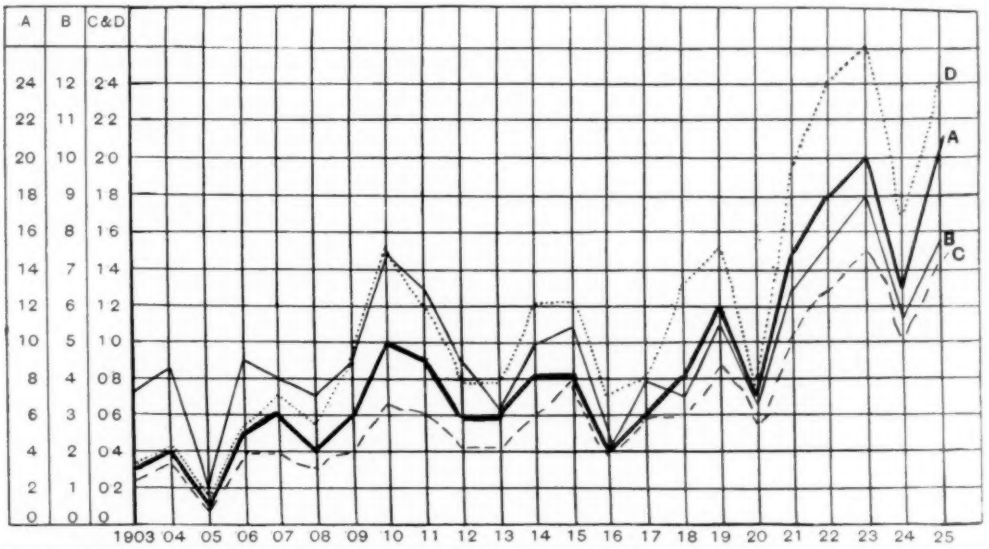


Chart showing incidence of pulmonary cancer at the Charité Hospital, Berlin, from 1903 to 1925. (D. Hanf: Virchows Archiv. f. Path.-Anat., 1927, cclxiv., 367.) A = Absolute figures for cancer of the lung. B = Percentage based on total cancer. C = Percentage based on post-mortem examinations on persons of all ages. D = Percentage based on post-mortem examinations on persons over 20 years of age.

Physical Signs.

The physical signs in the chest of necessity vary considerably according to the size and situation of the lesion, the same being true of the appearances seen in a radiogram. Growths in the mediastinum, like some aneurysms, may give rise to no appreciable signs on examination and may show an equally negative picture with X rays and diagnosis may not be possible until a later stage, when involvement of the recurrent laryngeal nerve may give rise to a typical abductor paralysis of one vocal cord, or pressure on other structures cause symptoms which reveal the real nature of the trouble. Where the growth bears a closer relation to the surface of the body, dullness to percussion is the most common sign, the degree of dullness depending on the size of the growth and the extent of lung and pleural involvement. In the case of a growth which has not spread far beyond the bronchus, quite definite dullness to percussion as well as opacity of the corresponding area in the skiagram may appear, owing to the relative atelectasis of that area of lung supplied by the obstructed division of the bronchus in question. I shall refer in a moment to some of the details of radiological examination, but it is convenient at this point to call attention to the early effects of bronchial obstruction upon both the clinical and radiological signs. Golden,[9] of New York, has shown in a series of radiological studies the development of bronchial carcinoma in two stages, a stage of invasion and a stage of bronchostenosis, the latter being characterised by bronchiectasis, infection, atelectasis, and pleural thickening, with or without fluid. According to his observations it seems that these changes probably occur in the order in which they have just been mentioned, and this is, I think, very much in accord with our own experience in this country.

Radiological Examination.

I now come to the radiological aspect of this matter, and although I do not want to say anything which might seem to lessen one's conception of the primary importance of accurate case-taking and methodical physical examination, I must emphasise the paramount importance of radiology in the differential diagnosis of such lesions as we are now considering. I have already indicated the variation which one may expect to find both in the symptomatology and in the physical signs, and the same is true of appearances presented to the radiologist. This once again emphasises the necessity of adequate coöperation between radiologist and clinician in the study of disease of the chest. Often radiographic examination alone is insufficient, and one has recourse both to the intratracheal injection of lipiodol and the introduction of air or oxygen into the pleural cavity as aids to radiological diagnosis.

I need not spend time in the discussion of the technical details of artificial pneumothorax induction of which a full description may be found in the late Dr. Riviere's admirable book.[10] The technique of lipiodol injection is simple enough, the main difficulty being due to the extreme viscidity of the oil. Burrell[11] uses a syringe with a screw piston and injects the lipiodol through the cricothyroid membrane. I myself have used the ordinary type of serum syringe and prefer injecting just below the cricoid into the

upper portion of the trachea. The introduction of the oil by means of a laryngeal syringe through the glottis may often be carried out satisfactorily, but it has the disadvantage of uncertainty, in that some patients cannot tolerate the procedure. Lipiodol injection will often give invaluable assistance not only in the diagnosis of growth in the chest but in the more accurate determination of the extent and position of the growth itself.

Bronchoscopy, Thoracoscopy, and Exploratory Thoracotomy.

Of bronchoscopy I would say that it is a means of examination, the possibilities and value of which have not received in this country the recognition which they deserve. It is true that the results of bronchoscopic examination may be entirely negative, but used in conjunction with other methods it should not be neglected, especially in those cases in which clinical and radiological examination have failed to establish a diagnosis and where definite evidence of stenosis of the bronchus may be furnished by direct vision through the bronchoscope.

Thoracoscopy may be of the greatest value. Some of the illustrations which I have exhibited here were made during the examination of one of my own cases at Brompton by Mr. Tudor Edwards[12] in which the cauterisation of adhesions was considered necessary. In cases of new growth the results of endoscopic examination may often furnish no information of diagnostic value; on the other hand, they may be of the greatest assistance. Like other methods of examination thoracoscopy must not be regarded alone, but in conjunction with other sources of evidence.

The final diagnosis of an intrathoracic lesion may, as in abdominal conditions, only be determined by an exploratory operation, although invaluable help may have been afforded to the surgeon by the previous examination if this has been carefully carried out. History repeats itself, and between the surgery of the abdomen and the surgery of the chest it is possible to make an interesting comparison. While at the present time one is bound to admit that the possibilities in regard to the treatment of intrathoracic neoplasms have considerable limitations, the successes of modern surgery in the removal of some of the less malignant forms have justified an attitude of determined expectancy. The use of radium in the treatment of pulmonary or mediastinal tumours, either alone or in combination with surgical measures, is to be encouraged, since no one can yet say the last word as to its possibilities or its limitations. I would deprecate very strongly the tendency to premature statements in respect of radium therapy, for I can conceive of no greater disservice to the public on the part of the medical profession than the broadcasting of optimistic encouragement which is not fully justified by scientific facts. The therapeutic aspect of intrathoracic and pulmonary new growths has indeed many disappointments, but I feel it no exaggeration to say that the advances of the last ten years have led those of us who are concerned with this work to regard it with some increase of confidence and with a vast amount of reasonable hope.

References.

1. Huguenin, R.: Cancer primitif du poumon, Paris, 1928.
2. Adler, I.: Primary Malignant Growths of the Lungs and Bronchi, New York, 1912.
3. Ménétrier, P.: Progrès méd., 1886, 2s., iii., 436; Le Cancer, Nouveau Traité de Médecine et de Therapeutique, Paris, 1927.
4. Letulle, M., and Bienvenüe: Bull. et mém. Soc. méd. hôp. de Paris, 1908, 3s., xxv., 610.
5. Ewing, J.: Neoplastic Diseases, Philadelphia and London, 1928, p. 851, et seq.
6. MacCallum, W. G.: A Text-book of Pathology, Philadelphia and London, 1924, p. 1032.
7. Hanf, D.: Virchows Archiv. f. Path.-Anat., 1927, cclxiv., 367.
8. Davidson, M.: The Lancet, 1927, i., 122; Davidson, M., and Ledlie, R. C. B.: Brit. Jour. Surg., 1928, xvi., 148.
9. Golden, R.: Amer. Jour. Roentgenol, 1925, xiii., 21.
10. Riviere, C.: Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis, London, 1927.
11. Burrell, L. S. T., and Melville, S.: Tubercle, 1926–27, viii., 19.
12. Edwards, A. T.: Brit. Jour. Surg., 1924, xii., 69.

AN ELECTROCARDIOGRAPHIC STUDY OF THE HUMAN HEART DURING AND AFTER NITROUS OXIDE ANÆSTHESIA.

By G. E. S. WARD, M.D., F.R.C.P. Lond.,
PHYSICIAN TO THE MIDDLESEX HOSPITAL;
AND
SAMSON WRIGHT, M.D., M.R.C.P. Lond.,
LECTURER IN PHYSIOLOGY, UNIVERSITY OF LONDON, KING'S COLLEGE.

From the Electrocardiographic and Physiological Department, Middlesex Hospital.

The changes which take place in the human heart during and after nitrous oxide anæsthesia have been studied by means of the electrocardiograph. All the observations were made on healthy young students who volunteered for the purpose. The patient was placed in the recumbent position and control electrocardiographic curves were first taken from all three leads. Anæsthesia was then induced with nitrous oxide, and curves from lead II. only were taken at short intervals during the induction period and for several minutes afterwards. In most of the experiments pure nitrous oxide was given in the usual dental fashion, using a well-fitting face-piece connected to a gas-bag and cylinder. In some cases, however, air was given deliberately or inhaled accidentally during the induction. Deep anæsthesia was always obtained, and the gas was discontinued as a rule just before the onset of jactitation; in some instances slight or severe convulsions took place. Considerable cyanosis usually developed. The duration of the induction period varied from 47 seconds to 90 seconds, the average time being about 1 minute in the 16 subjects studied. In addition, a small number of observations have been made under gas and oxygen.

The results with pure nitrous oxide were as follows.

Stage of Induction.

1. *Rate of Heart.*—There is an acceleration at the commencement of the induction which is emotional in origin. A further increase in rate occurs as consciousness is lost, and the maximum heart-rate is observed when the anæsthesia is at its deepest. The final rates varied from 106 to 145 per minute.

2. *Auricular Complex.*—The behaviour of the P wave showed considerable variation in the different individuals. In most cases it was not appreciably affected. In a few subjects it increased markedly in height, the largest rise being from an initial value of 3·5 mm. to 6·5 mm. (Fig. 6). In one subject the P wave decreased from 5 to 3·5 mm. during the induction, while in another subject (who had shown at first augmentation of the wave) the P wave disappeared completely at the depth of the anæsthesia.

3. *P–R Interval.*—The P–R interval was surprisingly stable in our experiments. In only one case was it prolonged, and then did not exceed 0·2 seconds. In a few subjects there was slight shortening of the interval; this was most obvious in the subject with the longest initial interval.

4. *Ventricular Complex.*—The most striking and constant changes were noted in the T wave which was affected in all subjects. In every case a decrease in height was observed. In seven cases it was abolished completely or reduced to negligible dimensions (Fig. 1); in one subject the T wave was completely inverted (Fig. 2). In several instances the S wave was followed by a long iso-electric period which ended in a small positive deflection (Fig. 5).

The R wave was decreased in almost every case. The reduction in the size of R did not necessarily run parallel with the changes in T. Thus in Fig. 2 the T wave was abolished after 20 seconds' inhalation of nitrous oxide, but the R wave was only reduced from 29·5 to 27 mm. The largest reductions were of the order of 25 per cent.—e.g., from 21 to 16 mm., 25 to 20 mm., or 18 to 14 mm. In one instance an increase in the wave was obtained. Out of six subjects with a well-marked S wave, a reduction was noted in five—e.g., from 7 to 5·5 mm., or 5·5 to 4·5 mm.

Recovery Period.

Soon after the nitrous oxide is discontinued recovery sets in.

1. Reduction in the rate of the heart takes place very rapidly, as is clear from the subjoined table.

Subject.	Rate at end of anæsthesia.	Interval.	Rate at end of interval.
1	131	18 sec.	92
2	142	27 ,,	109
3	118	47 ,,	97
4	130	25 ,,	85
5	133	1 min.	80

After three or four minutes the rate is usually less than it was before the administration was commenced.

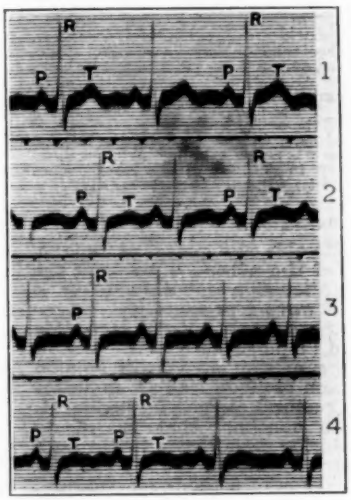
2. After air was given, the P wave underwent reduction in five subjects to less than its height in the control curves.

3. The P–R interval if it had been previously modified soon became normal. (Fig. 1, curve 4, however, shows slight shortening of the P–R interval after administration of air.)

4. In three subjects the R wave was further definitely decreased. Thus in subject Ro. the initial height of the wave was 21·5 mm., at the depth of anæsthesia 17·5 mm., and after breathing air for 25 seconds it was 14·5 mm. In nine subjects the R wave had not completely recovered at periods of four to eight minutes after the anæsthetic was discontinued—e.g., initial height 28 mm., at depth of anæsthesia 18 mm., 6 minutes 25 seconds later 23 mm. In two cases the R wave finally definitely exceeded its level in the control curves (Fig. 2, curve 5).

5. The T wave invariably began to return as soon as air was given. The recovery may be obvious after 15 seconds or less. Complete recovery took place in all but two subjects, the shortest time taken being 67 seconds. In two cases the T wave finally exceeded its height in the control curves (Fig. 2, curve 5).

FIG. 1.



Subject B. In this and the other figures all records are from lead II; the time is shown in 1/5th secs. and the height of waves in curves in mm. (1 millivolt = 1 cm. on original records). Pure N_2O inhaled for 47 secs. During administration, heart-rate increased from 94 to 133 per min. T wave abolished after 37 secs.; R wave decreased. After administration heart-rate rapidly returned to below its original level. Recovery in T wave noticeable after breathing air for 15 secs. But after 2 min. (not illustrated), neither T nor R has fully recovered.

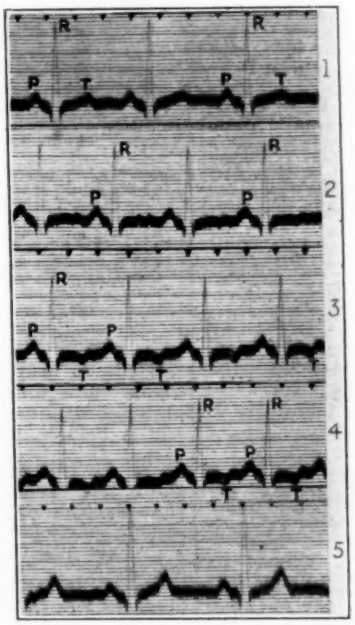
Curve 1 is a control curve taken before anæsthesia. Rate 94 per min. P 5+. R 25. T 6+. S 7. Induction with pure nitrous oxide commenced at 0 min. 0 sec.

Curve 2.—After 20 secs. Rate 120 per min. P 5+, 6. R 19, 20. S 4, 6. T almost abolished.

Curve 3.—After 37 secs. Rate 133 per min. P 5, 5+. R 19, 22. S 4, 6 (8). T abolished. Anæsthetic discontinued at 47 secs.

Curve 4.—After 1 min. 2 secs. (after 15 secs. air). Rate 104 per min. P 5, 5+. R 18, 20. S 5, 6. T just returning. P–R interval *decreased* slightly.

FIG. 2.



Subject G. Pure N_2O administered for 90 secs. During the administration the heart-rate increased from 90 to 124 per min. After 20 secs. the T wave was abolished. After 45 secs. T was definitely inverted; P–R interval was unchanged. Following administration the rate decreased to 77 per min. The T wave became upright again. Finally both R and T exceeded their amplitude in the control curve. The string was carefully restandardised before curve 5 was taken.

Curve 1.—Control curve taken before anæsthetic. Rate 90 per min. P 5½. R 29, 30. T 4, 5. S 2, 3. Induction with pure nitrous oxide commenced at 0 min. 0 sec.

Curve 2.—After 20 secs. Rate 108 per min. P 5½, 6. R 26, 28. S 2, 3. T abolished; long iso-electric period after S terminating in deflection which is first diphasic and then negative.

Curve 3.—After 45 secs. Rate 116 per min. P 5½, 6. R 27, 29. S 3, 4. T inverted. P–R interval unaltered.

Curve 4. After 1 min. 30 secs. Anæsthetic discontinued. Rate 124 per min. P 5, 6. R 28. T inverted. P–R interval unaltered.

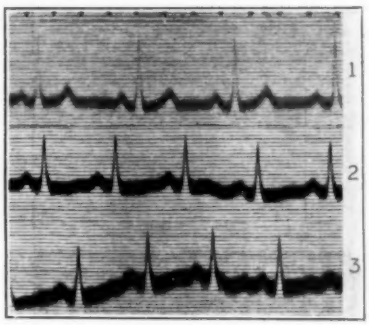
Curve 5.—After 6 min. 40 secs. Rate 77 per min. P 5½, R over 30. T 7, 8.

Discussion.

These results show that striking functional changes take place in the heart during the inhalation of pure nitrous oxide. There is marked tachycardia; the auricle shows variable changes, but conduction in the bundle of His is but little altered. When pure nitrous oxide is breathed, oxygen is washed out from the alveolar air and from the blood, so that an extremely severe anoxæmia is acutely produced, as is indicated by the development of cyanosis. Some decrease in the alveolar and arterial CO_2 probably takes place too, owing to the hyperpnœa which often occurs. The changes in the heart illustrated in the electrocardiographic curves might be due to the direct action of the nitrous oxide or they might be secondary to the accompanying anoxæmia.

This problem can be decided to a considerable extent by comparing the electrocardiographic changes under pure gas with those under gas combined with sufficient oxygen to prevent anoxæmia. Fig. 3 shows that in the subject Ro. after 25 seconds' inhalation of pure gas, the T wave was abolished, the R wave reduced from 21·5 to 16·5 mm., and the rate increased from 90 to 124 per minute. At 53

FIG. 3.



Subject Ro. Pure N_2O inhaled for 53 secs. During administration the heart-rate increased from 90 to 130 per min. The T wave was abolished after 25 secs. The R wave decreased from an average value of 21·5 mm. to 17·5 mm. After administration further reduction in the height of the R wave to 14·5 mm. occurred. After 25 secs. breathing air the rate had fallen to 85 per min. and considerable recovery of T had taken place. In this subject after 4 min. 15 secs. R and T had not fully recovered.

Curve 1.—Control curve before anæsthetic. Rate 90 per min. P 5. R 21, 22. T 6½, 7. Induction with pure nitrous oxide begun at 0 min. 0 sec.

Curve 2.—After 25 secs. Rate 124 per min P 5, 6. R 16, 17. T trace or abolished.

Curve 3.—After 53 secs. Anæsthetic discontinued. Rate 130 per min. P 6. R 17, 18. T absent at first, then recovery commenced.

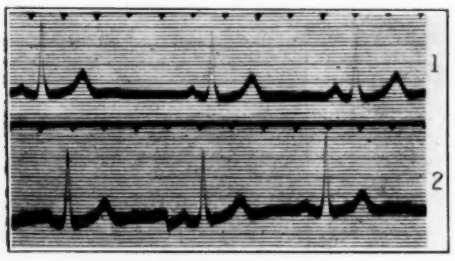
seconds the anæsthetic was removed; the pulse-rate was 130, the T wave was absent at first and then showed commencing recovery, and the R waves averaged 17·5 mm. At 68 seconds (25 seconds later) the T wave had recovered to 5 mm., though further decrease in the R (to 14·5 mm.) had occurred. Fig. 4 shows the effects of gas combined with adequate amounts of oxygen. After 4 minutes 15 seconds anæsthesia was present and the conjunctival reflex was lost; the pulse-rate, however, was only 73 per minute and the ventricular complex was not markedly different from that noted in the control curves.

Schneider and Truesdell[1] produced acute anoxæmia in normal subjects by inhalation of nitrogen for periods of 47 to 112 seconds (average 82 seconds). None of their subjects completely lost consciousness, though in some cases twitching was noted. The pulse-rate was found to increase from an initial level of 95 per minute to a final value of 120 per minute. When air was again breathed the pulse-rate returned to normal or below normal in 40 seconds. It seems justifiable to conclude that the tachycardia observed under pure nitrous oxide anæsthesia is wholly due to the accompanying anoxæmia.

Greene and Gilbert[2] observed changes in the T wave (similar to those noted by us) in chronic anoxæmia in man. In their experiments the oxygen-content of the inspired air was gradually lowered so that after 20 to 30 minutes a final value of 5 to 10 per cent. was reached.

Some reduction in the height of the T wave may occur during simple emotional tachycardia. In our experience the extent of such reduction for an increase in heart-rate of about 30 per minute is of the order of 1 to 3 mm. only.* The marked reduction, abolition or inversion of the T wave which we have described

FIG. 4.



Same subject as Fig. 3, on another occasion. Curve 1 is a control curve taken before anæsthetic. Rate 57 per min. P 4, 5. R 20, 21. T 7½, 8. Gas and oxygen were given for 4 mins. 15 secs., in the proportions of about four parts N_2O to one part O_2 approximately: the conjunctival reflex was absent. At this point curve 2 was taken. Note that the heart-rate was only 72 per min. and that little decrease in the height of R or T had occurred. (P 4, 4½. R 20, 22. T 6, 7.) Compare with Fig. 3.

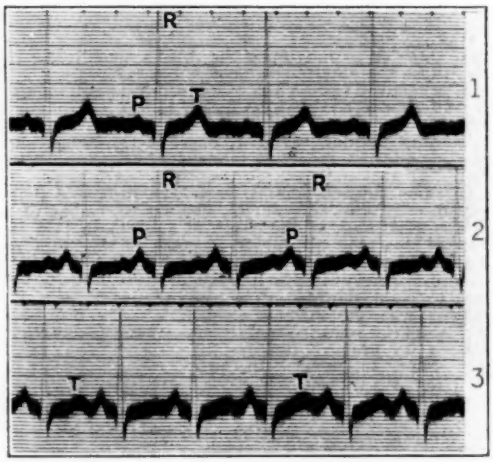
must be mainly due to the anoxæmia affecting the heart otherwise than through simple acceleration. This view is confirmed by the record shown in Fig. 5, which shows the effect of accidental inhalation of a breath of air during the induction period. The heart-rate is 124 per minute in Fig. 5 (curve 2), compared with 120 per minute in Fig. 5 (curve 3) after the air was breathed. Although the tachycardia persisted, immediate partial recovery of the T wave is noted in Fig. 5 (curve 3) which is presumably due to the beneficial effects of the oxygen breathed.

The cause of the changes in the R wave is not so clear. Marked decrease in the R wave usually occurs during pure nitrous oxide anæsthesia, and is absent with gas and oxygen. It must be pointed out, however, that further decrease in the height of the R wave may take place after air is administered.

* Compare, for example, the height of the T waves in the control curves of Figs. 3 and 4, in which the pulse-rates in one subject were 90 and 57 per minute respectively.

Lewis and Mathison[3] observed heart-block from acute anoxæmia in the cat. In their experiments the heart-block developed after a latent period of 1½ to 4½ minutes. The absence of heart-block in our experiments may have been due to the shorter duration of the anoxæmia.

FIG. 5.



Subject S. 1 is control curve taken before anæsthetic. Rate 82 per min. P 3, 4. R 34, 35. S 5, 6. T 7. Pure N_2O was then inhaled for 55 secs. After 20 secs. (curve 2) the heart-rate increased to 124 per min. The P was 6·5 mm. compared with 3·5 mm. originally. T was abolished and replaced by a small positive deflection at the end of a long iso-electric period which followed S. At 37 secs. a breath of air was inhaled (curve 3). The heart-rate was scarcely altered (120 per min.) but considerable recovery in T immediately took place. (T variable in height up to 5.) P still exaggerated, 6½, 7.

Conclusion.

There is still considerable difference of opinion about the significance of the normal T wave of the electrocardiogram (for discussion see Katz[4]). It is widely held that the T wave represents the "stage of retreat"—i.e., the disappearance of the excitation process at the apex and its persistence at the base of the heart. There is a general consensus of opinion that abolition or inversion of T in lead II. indicates serious functional or structural cardiac derangement. It seems justifiable to conclude that the acute anoxæmia produced during anæsthesia with pure nitrous oxide seriously depresses the ventricular myocardium. The change is of a temporary nature, and is rapidly recovered from; but even in our healthy subjects recovery was sometimes not complete after several minutes. It is possible that in patients with heart disease the immediate changes might be of a more serious nature, and it is conceivable, too, that they might be of a more lasting character. It suggests that pains should be taken in such patients to avoid any anoxæmia developing by giving adequate amounts of air or oxygen in combina-tion with nitrous oxide.

Summary.

The changes in the human heart during pure nitrous oxide anæsthesia have been studied electrocardiographically in 16 subjects. The principal results obtained were (1) tachycardia; (2) reduction, abolition, or inversion of the T wave in lead II.; (3) reduction in the R wave; (4) variable changes in the P wave; (5) little change in the P–R interval. The tachycardia and modifications in the T wave are attributed to the accompanying anoxæmia. The practical implications of these findings are discussed.

We are indebted to Drs. Anderson, Gray, Rose, and Slaughter for help with the administration of the

anæsthetics, and to the students of the hospital who kindly offered themselves as subjects for this work.

References.

1. Schneider, E. C., and Truesdell D.: Amer. Jour. Physiol., 1923, lxv., 379.
2. Greene, C. W., and Gilbert, N. C.: Arch. Int. Med., 1921, xxvii., 517.
3. Lewis, T., and Mathison, G. C.: Heart, 1910–11, ii., 47.
4. Katz, L. N.: Physiol. Rev., 1928, viii., 447.

ASTHMA IN CHILDREN.

THE VALUE OF SUGAR IN ITS PREVENTION AND TREATMENT.

WITH A NOTE ON THE TREATMENT OF INFANTILE ECZEMA.

BY A. ARNOLD OSMAN, D.S.C., M.R.C.P. LOND.,

PHYSICIAN, QUEEN MARY'S HOSPITAL, STRATFORD, E.; MEDICAL ASSISTANT, GUY'S HOSPITAL.

(*From the Department for Medical Investigations, Queen Mary's Hospital*).

IN a previous paper[1] attention was drawn to the importance of ensuring an adequate supply of sugar, in any form, in the diet of children, and it was shown how readily many of the minor symptoms of disordered health in children can be cured and prevented by this simple measure. It was pointed out, too, that amongst the disorders which apparently yielded quite readily to this treatment were some cases of asthma. The object of the present paper is to record four cases of typical bronchial asthma in children who have been rendered entirely free from attacks over periods of one to two and a half years by the simple addition of sugar to the diet and without any other form of treatment. During the past six years other cases have been treated in the same manner, with success varying chiefly with the care and persistency with which the treatment has been supervised by the parents, though it is not to be expected that all cases will respond so favourably as the four described below.

Rackemann[2] has shown that asthma in children is often completely controlled by careful attention to the hygienic conditions under which the child lives, but in the cases considered here an increased allowance of sugar in the diet was the only alteration made in the daily life of the child. All the patients were treated at home by the parents, and were seen regularly in the out-patients' department at fortnightly intervals. The treatment simply consisted in giving three drachms of powdered glucose in lemonade three times a day, in between meals, with extra sugar and "sweets" as recommended in the paper referred to above[1] for debilitated children. In each case this treatment resulted in a marked improvement in the general health and spirits, in addition to the complete disappearance of the asthma. No evidence has been obtained as to the mode of action of sugar in these cases, but I am inclined to attribute its beneficial effects to the improvement in the general health. Barber and Oriel,[3] however, consider that in these cases there is some hepatic dysfunction, and that sugar exerts its beneficial action on the liver.

CASE 1.—A boy, aged 8 years, had suffered from bronchial asthma since he was 3 years of age. Up till then he had been in normal health. The attacks apparently dated from whooping-cough contracted at the age of 3. The attacks generally occurred at monthly intervals throughout the year, and lasted for two or three days. He was an only child, small, pale, thin, and delicate-looking, but bright and intelligent, sometimes, but not habitually, constipated. His tonsils and adenoids had been removed at 4½ years of age. There was no family history of asthma or eczema. At the age of 5 he began to have typical attacks of cyclical vomiting with the usual pyrexia. These attacks occurred at about monthly intervals but did not coincide with the attacks of asthma or bear any apparent relation to the latter, though on two occasions the history of the symptoms suggests that the asthma was preceded by symptoms of cyclical vomiting—viz., pyrexia, headache, and vomiting.

Treatment was commenced in August, 1926, and he was given three drachms of glucose thrice daily, with extra sugar at meals, and sweets. Until December, 1928, he had no further attacks of asthma. For the previous 12 months he had ceased to attend hospital, and he admitted that he had recently not been having his usual allowance of sugar; as a result, he had a single attack of asthma. The treatment was resumed and since then, until he was last seen in August, 1929, he had had no more asthma or cyclical vomiting. This boy has therefore had only one attack of asthma during the past three years.

CASE 2.—A boy of 8, the elder of two children, was thin, small for his age (weighing 40 lb. 4 oz.), and very nervous. He looked a good colour and was not constipated. The family history as regards asthma was unreliable. He had never suffered from cyclical vomiting. At the age of four months he had had "eczema," and at two and a half years pneumonia. The attacks of asthma had begun at the age of 5, and had occurred at intervals of 14 to 21 days. They began with a cough which was succeeded by difficulty in breathing, and generally started at about 2 A.M., and lasted for 48 hours.

Treatment was commenced on August 16th, 1928, and was followed by a most remarkable improvement in appearance and physique, and he has since (up to June, 1929) had no further attacks of asthma.

CASE 3.—A boy, aged 4 years, was an only child, with a pale face and a flabby and watery body. He was first seen on March 9th, 1927, when he was 2½ years old. There was no family history of asthma or eczema. He had had bronchitis and pneumonia in the previous winter. He was always constipated. When seen he was in a typical attack of bronchial asthma; there was marked prolongation of the expiratory phase and the chest was full of sibilant râles and rhonchi. For the previous nine months he had been having similar attacks at intervals of three weeks.

Treatment was commenced as in the previous cases. A week later he was much better and was able to go out of doors. He has attended hospital since at fortnightly intervals and had had no further attacks of asthma by June 6th, 1929 – that is, for a period of two years and three months.

CASE 4.—A boy, aged 4½ years, whose maternal grandmother had suffered from asthma, was an only child, well built, and healthy looking. For the past three years he had suffered from attacks of cough and shortness of breath, mostly commencing during the night, and occurring every two or three weeks, both winter and summer. In some of the attacks he had headaches and vomited, and was said to be feverish. His weight was 2 st. 12 lb. 4 oz.

Treatment with sugar was begun on Feb. 18th, 1928. No further attacks occurred until Dec. 1st, when he had a mild attack. Examination of the urine showed excess of acetone bodies, suggesting that he was for some reason not having sufficient sugar. Renewed instructions as to the importance of treatment were given, and no further attacks have been experienced.

From a consideration of these cases it seems that an increased allowance of sugar, as such (i.e., not as starchy foods), in the diet alone was sufficient to prevent recurrence of asthma in these four children over a considerable period of time. The result justifies the hope that a simple and effective cure and preventive measure has been found for this distressing disorder, at least in some cases. Unfortunately, so far as my experience goes, sugar is without value in the treatment of asthma in adults.

It is not possible to lay down more precise rules for the exact amount of sugar required in a given case. In general it may be said that that amount—ascertained by trial—must be given which will ensure that the urine does not contain an excess of acetone bodies (positive Rothera reaction) under any conditions of stress—i.e., worry, excitement, or infection. In practice, this would generally seem to be met by the doses given in the cases here recorded. The administration of alkalis in these cases does not appear to enhance the action of the sugar in any way.

Sugar in the Treatment of Infantile Eczema.

In view of the supposed connexion between eczema and asthma in children, it is of interest to note that, quite contrary to the usual teaching, sugar also appears to be of some value in the treatment of infantile eczema. This is so subject to spontaneous recovery and remissions that little would be gained

by a detailed account of the individual cases treated, but it may be stated that in seven cases of severe infantile eczema, one involving the whole of the head, face, and trunk, glucose added to the feeds or given in lemonade was the only form of treatment employed. No other alteration in the diet was made and in none of the cases was there any local application to the skin, which, where necessary, was covered with changes of dry sterilised lint, lightly bandaged on. Bathing was forbidden. The first result noted was a drying-up of the weeping areas, and this was followed by dropping-off of the scales. None of these cases have been under observation for a sufficient length of time to determine whether or not this therapeutic measure is of any prophylactic value for recurrences of eczema. Nor is it suggested that this procedure gives better results than recognised methods for the treatment of this condition, though it may be of value in some cases in addition to the usual local measures.

These observations form part of an investigation on subnormal children carried out with the aid of a grant from the Medical Research Council.

References.—1. Osman, A. A.: Brit. Med. Jour., 1929, i., 150. 2. Rackemann, F. M.: Arch. Int. Med., 1928, xli., 346. 3. Barber, H. W., and Oriel, G. H.: THE LANCET, 1928, ii., 1009.

EMOTION AND ACUTE GLAUCOMA.

BY W. S. INMAN, M.B. LOND.,

SENIOR OPHTHALMIC SURGEON, PORTSMOUTH AND SOUTHERN COUNTIES EYE AND EAR HOSPITAL.

FOR many years ophthalmologists have accepted emotion as an exciting cause of acute glaucoma. My own experience has suggested that even though conscious emotion may not be present, at any rate in a sufficient degree to account for the attack of glaucoma, nevertheless the onset may coincide with the anniversary of events once pregnant with emotion but now apparently indifferent or even long since forgotten. The psychological investigation of such cases might lead to a further knowledge of the mechanisms involved, and so enable us sometimes to prevent the development of this very serious and painful disease by providing for the discharge of the emotion through legitimate paths.

I was recently called in to see a retired medical man, aged 77, who had developed acute glaucoma in the left eye the night before. This at first sight seemed to be a case unassociated with any emotional experience. The patient said that he had had no upset on the previous day. He had gone to bed at 10 o'clock and a quarter of an hour later the attack had begun. But I was suspicious. Experience had made me wary of accepting such evidence, and I remarked to the doctor in charge, who knew of my researches, "This is probably a case of periodicity." The patient did not understand the drift of my remark, but his son, who was unusually intuitive, said that he thought he could shed some light on the attack. "Yesterday," he said, "was my birthday, and my father, who has felt recently that he would not live much longer, spent some time last evening in discussing my future after his death." Father and son were living together alone, and the bond between them was very close. The former declared that he had not been worried by the thought of death, but it was clear that he was much concerned about his son's welfare, and had chosen the birthday as the appropriate occasion for the contemplation of the most momentous event which can happen to anyone after birth. There were other matters in the conversation which might have been expected to evoke emotion from the patient, notably that several members of the family had died suddenly, the eldest and last surviving sister having done so at the age of 77. The patient, having now attained this age, thought that he too might die suddenly and wished to assure himself of his Benjamin's happiness before departing.

The patient's nervous state was shown during the operation by great restlessness, although he felt no pain. I intentionally refrained from keeping the other eye under eserine, but no further symptoms arose until two days later, when glaucoma developed. I was anxious not to operate until the left eye was safe, so reassured him, and instilled eserine. Within a few hours the symptoms of glaucoma had disappeared, and they never recurred, though he had no further treatment. A fortnight later it was decided to see what effect dilatation of the pupil would have in order to settle whether a prophylactic trephining should be done. Accordingly, homatropine was instilled after the eye had been carefully examined for any signs of past or present glaucoma. The pupil became dilated until the iris was almost invisible, but the tension remained normal and has done so up to the present, the next anniversary producing no recurrence of the disease.

Thus, in this case at any rate, some factor other than mere mechanical dilatation of the pupil must be invoked to explain why he got glaucoma in the right eye, and it is that factor which needs the most careful investigation. That it frequently depends upon some emotional disturbance is, as I have said, commonly admitted. The circumstances of the onset in the patient's left eye suggest that an attack may replace an emotion, for the strange part of the story is that the father was perfectly calm during the talk with his son and was not conscious of any mental disturbance. The son assured me that it was the custom to talk freely about possible deaths in the family. It had been so during the mother's fatal illness some years previously, and she had then serenely made detailed arrangements with her family for her burial. If, then, the patient felt no ill-effects from the conversation, can we conclude that there was any connexion between it and the ensuing glaucoma? Like all medical questions involving proof, this is difficult to answer. One case does not establish a rule, and the application of statistical methods in psychological investigation is by no means easy.

Space does not permit me to give details of the 20 consecutive cases which have been followed out, but the most striking feature has been the absence of conscious mental stress sufficient to account for the acute attack. Only two followed soon after a death in the family, and the interval in each case was sufficiently long to have allowed the patient's grief to be tempered by time. Indeed, in a long experience, I can call to mind only one instance where acute glaucoma followed immediately upon a death in the family. This was the case of a man who developed the disease whilst returning from the funeral of his mother.

In attempting to explain these strange phenomena, which, as I hope to show in future papers, could be multiplied indefinitely for eye diseases in general, one naturally turns for enlightenment to any psychological theory which might fit in with the facts, and it is with something of a shock that one remembers the emphasis laid by Freud upon the legend of Œdipus, who blinded himself in expiation of his unwitting offences against his parents. It is possible that research will reveal more and more the profound influence of complexes in the determination of organic as well as functional illness. The first case I investigated got acute glaucoma the day before the anniversary of her mother's death 47 years before—a date which she had completely forgotten—and had a recurrence of the symptoms, without actual increase of tension, on her own birthday six months later. Another woman developed an attack on her birthday, while yet another became glaucomatous while fretting over a slight chill which might have prevented her attending her mother's birthday party on the morrow. One man, aged 58, burst into tears when asked about his mother's death, which had occurred within a day or two of the date of his attack of acute glaucoma but with an interval of 48 years.

These patients, amongst others, certainly seem to have lost their sight temporarily in connexion with intimate family relationships of many years' standing. The latter are not consciously of such a nature as ordinarily to produce serious illness, and one must presume the working of an unconscious mental mechanism, unless the associations now recorded are to be attributed to pure coincidence. If the former, then the ophthalmologist must seek the aid of a skilled psychopathologist to arrive at a further

elucidation of the problem, for direct questioning may be valueless. There must be many cases of acute glaucoma in which the mechanism necessary for the attack has been set in motion by stimuli other than the recurrence of a certain date. The latter has merely been used as a convenient formula for the purpose of investigation in old people who could not be subjected to direct analysis.

Clinical and Laboratory Notes.

A CASE OF KIENBÖCK'S DISEASE.

ULTIMATE RECOVERY WITHOUT OPERATIVE TREATMENT.

By E. W. Riches, *M.C.*, M.S. Lond., F.R.C.S. Eng.,

ASSISTANT SURGEON TO THE HOSPITAL OF ST. JOHN AND ST. ELIZABETH; SURGICAL REGISTRAR TO THE MIDDLESEX HOSPITAL.

Several cases of this somewhat rare condition of traumatic osteoporosis of the carpal semilunar have been described recently.[1] The present case is considered worthy of record, in view of the almost perfect functional recovery after an interval of four years without operative treatment.

The patient, a crane-driver aged 33, who used his right hand to manipulate switches and brakes, was admitted to the Middlesex Hospital on July 20th, 1925, having fallen 30 feet from his crane. The diagnosis made was "compound fracture of left tibia and fibula; 'sprain' of right wrist." The pain in the wrist quickly subsided until after his discharge three months later, when he was using crutches. It then increased gradually, and was severe by March, 1926, when there was swelling and tenderness on the dorsum of the wrist and limitation of all movements. X ray examination showed patches of rarefaction and increased density in the semilunar bone.

Massage and movements were ordered, but caused no improvement. In August, 1926, the wrist was put up in plaster in dorsiflexion for three weeks, followed by massage and radiant heat; this brought about a slight improvement. In October the pain was greatest when at rest, and a cock-up splint was ordered for wear at night. In November an X ray showed some increase of the areas of rarefaction at the expense of those of increased density. In February, 1927, there was still considerable limitation of movement and X rays showed no further changes. In March the hand was manipulated under an anæsthetic; the utmost movement obtained was flexion 45°, extension 35°, adduction 30°, and abduction 0. By September there had been little change. X rays showed the areas of rarefaction now predominating. In December movement and power were limited by 50 per cent.; he could not carry a bucket of water without pain. There was swelling and tenderness over the centre of the dorsum of the wrist and an increase in the antero-posterior diameter, but no crepitation on movement. Pain in the wrist was caused by percussing the heads of the third and fourth metacarpals.

In August, 1929, he had almost completely recovered power, and could lift heavy weights with only occasional pain. He obtained a flexion of 60°, an extension of 45°, an adduction of 45°, and an abduction of 20°, and there was no tenderness, though antero-posterior thickening remained. The X ray showed mainly an increased density of the semilunar, with no arthritic changes in the carpus.

Comments.

This condition was first described by Peste in 1843; in 1910 Kienböck collected 36 cases, and his name has since been associated with the disease.[2] A similar condition of the carpal scaphoid is known as Preiser's disease, and various combinations of carpal bones may be affected, including the os magnum and unciform, as well as the semilunar and scaphoid. Buchman has described seven such multiple cases.[3]

Of Kienböck's 36 cases, 31 were males; in 24 the right wrist was affected, and 23 were between the ages of 17 and 39 years. These proportions are borne out by other observers; Goldsmith states that males are affected seven times as often as females, and the right wrist two and one-half times as often as the left, and that the commonest age of incidence is in the third or fourth decade.[4] Most observers agree that the condition follows trauma, either a single severe pressure insult or repeated small injuries, such as are received in some occupations. Müller describes in addition an anatomical type due to abnormal pressure lines from anatomical anomalies, but this has not been universally accepted. In the present case occupational trauma was present, but the onset was determined by a single violent injury.

There is, as in this case, an initial acute stage lasting for some weeks, with swelling, pain, and tenderness over the semilunar, and limitation of movement. This is followed by an interval of comparative freedom from symptoms, lasting possibly for several months. Increasing disability then becomes manifest, with swelling and tenderness, and the patient is left with a permanent moderate degree of disability.

In addition to the swelling and tenderness over the semilunar and limitation of movement, two "pathognomonic" signs have been described by Finsterer.[5] These are loss of prominence of the third knuckle, due to compression of the semilunar in its vertical axis, and pain in the semilunar on percussing the head of the third metacarpal. This latter sign is present also in some cases of fracture of the carpal bones, and the amount of radial or ulnar deviation of the hand determines which metacarpal must be percussed to give the maximum pain. Radiographic signs are usually negative in the first stage. Subsequently, areas of rarefaction and areas of increased density appear; the bone tends to be compressed vertically and widened antero-posteriorly. The proximal part is usually involved first, and may become fragmented; it is held by some that a fine line of fracture can be seen in cases examined early.

Pathology.

Examination of an excised bone shows that it contains cysts, with loose and dense fibrous tissue invading it. Various theories have been advanced to account for the condition; they may be summarised as follows:—

(*a*) *Those assuming the presence of a fracture.*—(1) Localised osteitis fibrosa in the region of a fracture (Wollenberg). (2) Defective regenerative ability of the carpus (Baum). (3) Aseptic primary bone necrosis with a pathological fracture (Axhausen).

(*b*) *With no assumption of fracture.*—(4) Injury to blood-vessels, due to tearing of the dorsal and lateral ligaments following a momentary dislocation, and followed by rarefaction (Preiser). That this is probably incorrect was pointed out by Ogilvie when showing a case recently at the Medical Society of London; he had followed up cases of dislocated semilunar which were reduced, and none had developed Kienböck's disease. (5) Abnormal pressure due to anatomical anomalies (Müller). (6) Degeneration (Destot). (7) Infection (Fontaine). (8) Leriche assumes that there can be no rarefaction without hyperæmia, and suggests a traumatic axone reflex, the sequence being trauma, vaso-constriction, vaso-dilatation, bone absorption.

In considering the possibility of an initial fracture, it must be remembered that fracture of the semilunar bone alone is very rare; Goldsmith reports only 14 cases in 13,143 fractures of all bones, or 0·1 per cent.[6] It is also difficult to conceive of any mechanism by which the semilunar alone can sustain a "crush" fracture without injury to other carpal bones.

The condition cannot be regarded as similar to Schlatter's disease, pseudo-coxalgia, or Köhler's disease of the tarsal scaphoid, all of which occur in the growth period. Henderson suggests Kümmell's disease of the spine as the nearest analogy.[7]

Prognosis for complete cure is not good; osteo-arthritis may develop as a sequela.

Treatment.

Treatment may be non-operative or operative. Rest is indicated in the acute stage, preferably in plaster. Massage, active and passive movements, and radiant heat may help to restore function, and manipulation under anæsthesia may increase the range of movement. Operative treatment consists in excision of the semilunar; no guarantee, however, can be given of complete restoration of function. Müller has reported one case cured by complete extirpation of all bone debris, leaving behind a shell of bone.[8] Ogilvie, at the Orthopædic Section of the Royal Society of Medicine, recently showed two cases in which perfect function followed removal of the semilunar bone, while Fairbank showed a case in which this operation was followed by no improvement.

I am indebted to Mr. Turner Warwick for permission to describe the case, and to Dr. F. G. Nicholas for the skiagrams.

References.

1. Proc. Roy. Soc. Med. (Orthopædic Section), 1929, xxii., 1459.
2. Kienböck, R.: Fortschr. a.d. Geb. d. Röntgenstrahlen, 1910, xvi., 77.
3. Buchman, J.: Ann. Surg., 1928, lxxxvii., 892.
4. Goldsmith, R.: Ibid., 1925, lxxxi., 857.
5. Finsterer, H.: Beitr. z. Klin. Chir., 1909, lxiv., 85.
6. Goldsmith, R.: Loc. cit.
7. Henderson, M. S.: Jour. Bone and Joint Surg., 1926, viii., 504.
8. Müller, W.: Beitr. z. Klin. Chir., 1920, cxix., 664.

A CASE OF MENINGO-ENCEPHALITIS FOLLOWING GERMAN MEASLES.

By J. H. E. Brock, M.D. Lond., F.R.C.S. Eng., D.P.H.,

LATE HONORARY PHYSICIAN TO THE WESTMINSTER GENERAL DISPENSARY.

While cases of encephalitis have been recorded from time to time following measles, variola, vaccinia, herpes, pneumonia, and typhoid, I do not recollect ever having read of or seen a case following German measles. The rarity of the association makes this example worth recording.

The patient, a spinster aged 23 years, was by profession a lecturer on art. She had had three attacks of measles, the last one year previously, and also scarlet fever, followed by diphtheria when about to be discharged from the hospital. After the diphtheria she had had paralysis of the soft palate and then tachycardia. She left the hospital with the latter, and it continued for several months before the rhythm returned to normal. The heart was left with no permanent damage. The appendix was removed in 1928. In February, 1929, she had influenza.

She came to see me on April 23rd, 1929, explaining that the glands on both sides of the neck had been swollen for six days. There was no local cause for the enlargement in throat, nose, scalp, or ear. The temperature was 98·4° F. and the pulse-rate 72. All the posterior cervical glands were enlarged on both sides and easily palpable. At the tip of each mastoid was a gland rather larger than the others. The axillary, epitrochlear, and inguinal glands were unaffected. There was no rash. Heart and lungs were normal and the spleen was not enlarged. On the same evening the temperature rose to 100·8° and a few spots appeared on the cheeks and neck.

On April 24th the morning temperature was 99°, and the evening temperature 101°. There was a typical, rather fine macular rash on face, neck, arms, and trunk. On April 25th the temperature was 98·4°; the rash was paler and the glands smaller. On April 26th the rash had almost disappeared and the glands were subsiding. On the same night at 10 o'clock she had violent occipital headache and shooting pains in the body, with a temperature of 101·8°. There were no physical signs. I was called to see her at 7.15 A.M. on April 27th as she had had no sleep owing to severe occipital headache. There had been no sickness. She then had a temperature of 102° and a pulse-rate of 96, regular. The head and neck were held rigid; the head could not be flexed on the sternum, and any attempt to do so made her shriek with pain. There was severe pain across the back, so that she was unable to raise herself in bed. The pupils were equal and reacted to light and accommodation. There was divergent strabismus of the right eye. All the other cranial nerves were normal. There was no loss of power in arms or legs and no rigidity in the limbs. The grasp was equal and the knee-jerks were brisk, but ankle-clonus was not present. Abdominal reflexes were present and Kernig's sign absent; and there was no tache.

On the same afternoon she was seen in consultation with a physician, to whom I suggested one of four diagnoses, viz.: (*a*) meningitis, (*b*) meningism, (*c*) encephalitis, (*d*) meningo-encephalitis. I also suggested lumbar puncture. None of my suggestions was accepted, as the condition was thought to be due to rheumatism, for which a salicylate and alkali mixture was prescribed. Retention of urine occurred during this evening. She had a bad night owing to severe occipital and vertical headache. She was sick four times during the night. On the morning of April 28th her temperature was 100·8° and her pulse-rate 108. There was no change in her condition. On this evening the salicylate had to be stopped as it was causing noises in the head. On the morning of April 29th the temperature was 101°. She had been sick during the night and retention of urine continued. There was diplopia with binocular vision and the right plantar reflex was extensor. The headache and rigidity of the neck and back were unaltered.

A second consultation was held, and this time a lumbar puncture was done. The cerebro-spinal fluid was not under pressure and came away in drops; it was perfectly clear and colourless but contained 296 cells per c.mm., chiefly lymphatic with some epithelial cells. The total protein was increased to 0·07 per cent.; no organisms were present and the Wassermann reaction was negative. The opinion of the pathologist was that the findings would fit in with an encephalitis, not lethargica. As the patient had had no action of the bowels since April 24th, in spite of mild aperients, she was given calomel grs. 2, followed by magnesium sulphate ℥i. On April 30th there was no action of the bowel and the urinary retention continued. There was somewhat less headache and rigidity of the neck. A draught of cascara and senna was administered, followed by a copious soap-and-water enema. The whole of the latter was retained and there was no result. On May 1st the headache was less and the head could be moved more freely. The catheter had still to be used, and there was no action of the bowel. She was given calomel gr. ½ every hour, and later on in the day a soap-and-water enema, which produced a good result. Constipation had lasted a week. On May 2nd she was sick three times but the headache and rigidity of the neck were much better. On May 3rd she had five hours' continuous sleep and was free from headache in the morning. The left plantar reflex remained flexor and the right could not be obtained. There was no sickness. Diplopia and retention of urine continued but the bowels were well open.

Thereafter she continued to make good progress. The evening temperature fell gradually and reached normal on May 10th, when she was free from headache and could flex the neck fully. The diplopia had disappeared, both plantar reflexes were flexor, and the bowels were acting regularly, but retention of urine persisted, necessitating the use of the catheter night and morning. She passed urine spontaneously on May 12th. From this date progress was uninterrupted and recovery was complete. The attack left behind no tendency to headache, restlessness, or insomnia, nor did it interfere with any of her special senses nor dull the acuteness and rapidity of her intellectual processes.

I have retained the diagnosis of meningo-encephalitis for this case in spite of the fact that the pathological report lent no support to the idea that there was actual inflammation of the meninges. Unless there was considerable engorgement and irritation of the pia-arachnoid, such symptoms as violent occipital headache, vomiting, reflex spasm of the cervical and dorsal muscles, and obstinate constipation are difficult to explain. The characters of the cerebro-spinal fluid, the right external strabismus and diplopia, the retention of urine, and the right extensor plantar reflex point to encephalitis.

I have recently seen this patient and found her in vigorous health. She resumed her occupation at the beginning of October and found no disability after her illness. I have, of course, advised her to avoid mental strain and overwork, and to take plenty of rest in bed.

GENERAL MEDICAL COUNCIL.

PENAL CASES.

TUESDAY, NOV. 26TH.

ACCORDING to custom, the Council heard the cases in public, deliberated upon them in camera, and the President then announced the decision.

Reported from the Dental Board.

The Case of James Ireland, registered as of "Buena Vista," Costock, Nottinghamshire, "Dentist 1921."

In May, 1928, Mr. Ireland had been summoned by the Board to attend an inquiry in respect of convictions for (*a*) being drunk whilst in charge of a motor-car, (*b*) of driving a motor-car in a manner dangerous to the public, and (*c*) of being drunk and disorderly. The convictions were found proved, but judgment was postponed for six months. In November, 1928, the case was discharged, and Mr. Ireland gave his assurance that he would do his best to justify the leniency of the Board. He was informed that if he had to appear before the Board again, the result might be very serious. On May 29th, 1929, however, he was again convicted at the Nottingham police-court of being drunk and disorderly, and was fined 10*s*. He sent a letter to the Board's solicitor that he was not intoxicated or disorderly at the time, but was upset and excited owing to the loss of his money which had been picked from his pocket while waiting for a 'bus. He said he could not attend the inquiry owing to an injury to his leg in August last, when he was run down by a motor-car, and the consequent expense. He was asked to send a medical certificate of inability to attend, and thereupon submitted one dated August 21st, 1929, given him at the time of the accident, which stated that he was at that time disabled from following his employment. The police reported that when Mr. Ireland was arrested he was drunk and wanted to fight anyone near him.

The Dental Board had found the conviction proved, and advised that Mr. Ireland's name should be erased from the Register.

Mr. Ireland sent a letter pleading the hardship involved to his family if his name were erased. The Council directed the Registrar to remove his name.

The Case of Mihrane Haroutune Chirinian, registered as of 26, Coventry-street, London, W.1, "Dentist 1921."

He had at the County of London Sessions commencing on April 9th, 1929, been convicted (in the name of Mihrank Haroutin Chirinian) of stealing one suit-case and other articles, the property of Violet Gutteridge; one suit, the property of Airey and Wheeler; 24 pairs of silk stockings, the property of Etams, Limited; and one gold cigarette case, the property of Elkington and Company; and sentenced to three years' penal servitude and recommended for deportation. The Chairman of Session in passing sentence had said it was plain that Chirinian was a dangerous and dishonest man, who preyed upon everybody with whom he came in contact. Respondent had applied to the Court of Criminal Appeal for leave to appeal against the conviction, and the application had been dismissed. He had sent letters to the Board's solicitor and to the Registrar of the Board from H.M. Prison, Parkhurst, denying that he was guilty of the offences, and asking for a postponement of the inquiry until he was released from prison. He complained of not being given time enough to petition to the Home Secretary for permission to attend the inquiry, and his inability to engage a lawyer. The notice of inquiry had been sent to Mr. Chirinian on Oct. 17th, 1929, thus giving him ample time to apply to the Home Office and to engage a lawyer, provided he had the means for the latter.

The Board had found the conviction proved, and had recommended that the name of Mihrane Haroutune Chirinian be erased from the Register. Mr. Chirinian did not attend and was not represented. The Council directed the Registrar to erase his name.

Restorations to the Dental Register; Dental Education.

After further deliberation in camera the President announced that the following names had been restored to the Dental Register: Laurent Eugene Deprimoz and William Laird.

The Council then received and adopted the report of the Dental Education and Examination Committee. The University of Adelaide, Mr. Dolamore said, had now complied with the requirements of the Committee and it was therefore recommended that the degrees of B.D.S. and D.D.Sc. Adelaide be recognised as entitling to registration on the Colonial list. The Committee had observed that not all degrees in Great Britain and Northern Ireland and the Irish Free State were recognised as entitling to registration in South Australia. They also noted that persons whose names appear on the Dentists Register with a British degree or licence are required to pass a practical test in New South Wales. They desired that the attention of the authorities should be drawn to these anomalies. Conversations had taken place with a representative of the Japanese Embassy, and after careful inquiry the Committee was satisfied that the differences between the Japanese system of dental education and the British were so fundamental that it was not possible to permit Japanese dental qualifications to entitle the holder to registration in this country.

Mr. J. W. McGowan and Mr. E. L. Sheridan were appointed members of the Dental Education and Examination Committee in place of Mr. Guy and Mr. Ackland.

The Council considered in camera the *Case of James Edgar Nelson*, reported by the Dental Board, and the President announced that the case was to be remitted to the Board for further inquiry and report.

Medical Case Adjourned from November, 1928.

The Case of Bertie Edward Acland, registered as of 120, Leonard-road, Birches Head, Hanley, Stoke-on-Trent, M.B., Ch.B., 1924, U. Liverpool, who had previously appeared before the Council on the following charge:—

"That you were convicted at the Hanley petty sessions of the following misdemeanours—viz.: (1) On July 22nd, 1926, of being drunk in charge of a motor-car, and were fined £10 and witness fee £1 1*s*., or two months' imprisonment in default; and (2) on Oct. 2nd, 1928, of being drunk in charge of a motor-car, and were fined £20 and witnesses' fees £2 1*s*., and were disqualified for holding a driving licence for two years."

Last year the Council had postponed judgment. Mr. Acland appeared, and the Council's solicitor read letters from his professional brethren testifying to his sobriety during the past year and from the police authorities saying that there had been no further conviction against him. Mr. Acland spoke of the increase of his panel practice and assured the Council of his intention to abstain from alcoholic excess in future. The Council decided not to erase his name from the Register.

An Erasure for Immoral Relations with a Patient.

The Case of Angus Dugald Buchanan, registered as c/o Messrs. Crawford Herron and Cameron, 257, West George-street, Glasgow, C. 2, M.B., Ch.B. 1911, Glasg., who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner, you abused your position by committing adultery with Elizabeth McCarron or Campbell, whom and whose family you had attended professionally, subsequent to which you were co-defender in the case of Campbell *v.* Campbell and Buchanan in the Court of Session, in which proceedings a decree of divorce was pronounced on Nov. 9th, 1928. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

Mr. Harper, the Council's solicitor, said that there was no complainant in this case, but the facts had been brought before the Council by Mr. Campbell. Adultery and professional relationship had been set out in the divorce proceedings, but the professional relationship was now emphatically denied and the respondent claimed that Mr. Campbell had known of the relationship and had shared in large sums of money paid by respondent to Mrs. Campbell. Dr. Buchanan had not contested the divorce proceedings but had left for Australia; he now maintained that the proof of

professional relationship in absentia was no proof. Mr. Harper had nevertheless put in evidence the divorce proceedings. It was claimed that coolness between the husband and wife had started from September, 1925, when the respondent had been called in professionally, but the husband had ascribed it to the neurasthenia from which she suffered. In 1928 the husband had learned that his wife and respondent had carried on frequent and continuous adultery from June, 1925. He believed that respondent had taken advantage of her neurasthenia to excite her passions. The sum of £1000 damages had been awarded by the divorce court.

Mr. Malcolm Campbell, examined by Mr. Harper, testified to his two declarations confirming the account of the case given by Mr. Harper. His wife had told him early in 1925 that she was being attended by Dr. Buchanan but he had never seen him in the house; he knew, however, that respondent had attended his son and daughter, and had seen in the house medicine bottles from Dr. Buchanan's surgery bearing his wife's name. He had never received any money from Dr. Buchanan, and he absolutely denied collusion, except that Mrs. Campbell had confessed and handed over Dr. Buchanan's letters in July, 1928. He had commenced divorce proceedings within a week, and had only seen his former wife once since the proceedings. So far as he knew, Mrs. Campbell had never received any money from Dr. Buchanan or anyone else. Mrs. Campbell had paid the fees in cash; he had never paid any bill to Dr. Buchanan. He had received anonymous letters about his wife, but when she had handed him Dr. Buchanan's letters he had been completely surprised. Mr. Harper read from an affidavit by Dr. Buchanan's nurse, saying that Mr. Campbell had appeared to be acting a part when he received the letters; this Mr. Campbell denied.

Cross-examined by Mr. Henderson, he said his first suspicion of anything wrong was on June 23rd, 1928, although it was true that Mrs. Campbell had been meeting Dr. Buchanan three or four times a week for three years. He had never asked her where she had been on the occasions when she had been out on his return from work. The anonymous letters had aroused momentary suspicions only. He denied that he had visited his wife since the divorce, tapping at the window for admission, or that he had been aware of his wife's relations with the doctor. He was aware that his wife had become possessed of a fur stole and silk underclothing; he had not bought them but had provided them. The piano and suite of furniture had been acquired before 1925. He had not noticed any marked increase in the comfort of the home after the meeting with Dr. Buchanan. His income had been £3 10*s.* a week. Mrs. Campbell had been called as a witness on his behalf in the divorce case; this had been arranged by the solicitor. He had not supported his wife since the divorce or given her any part of the damages. He had, however, helped his children with their education. He had paid a bill of two guineas from Dr. Buchanan early in 1928, but had never seen a receipt. He did not know of his own knowledge that his wife had ever visited Dr. Buchanan. She had been a patient of Dr. Scotland's before 1924; Dr. Scotland had never been to the house.

In answer to the Legal Assessor: Mrs. Campbell had herself brought home the bottles. On one occasion the daughter had fetched the bottle from Dr. Buchanan's surgery, and he had given her the money to pay for it, and had packed it off to his wife, who was on holiday. He had never seen any bottles from Dr. Scotland.

Mrs. Cumberford, Mr. Campbell's sister, testified to her declaration, in which she said that Mrs. Campbell had told her that she was dissatisfied with Dr. Scotland and proposed to change to Dr. Buchanan. She had accompanied Mrs. Campbell to the doctor's surgery and had seen her go into the surgery and receive and pay for medicine at his dispensary; she had seen Dr. Buchanan in her house. Mrs. Campbell had told witness that she had to go to Dr. Buchanan's surgery three times a week for treatment for sexual troubles and neurasthenia. Witness had never heard about varicose veins.

Cross-examined, she said she had been friendly with Mrs. Campbell until the divorce. She had been to the surgery twice and seen Mrs. Campbell pay for medicine both times, about April, 1925. Both doctors' names were on the bottle-label. Witness had not noticed a number. When Mrs. Campbell had been in bed Mrs. Johnstone had attended to her.

In reply to the Legal Assessor: Mrs. Campbell had first seen the doctor and then fetched the medicine from the dispenser. Witness was not sure whether or not she had handed any prescription to the dispenser.

In answer to the President, Mrs. Campbell had said she was going in to consult Dr. Angus Buchanan, but the consulting-room door was not marked with his name.

Mrs. Campbell testified to her statutory declaration, in which she admitted adultery with Dr. Buchanan, and that she had first met him professionally in his consulting-room and had continued his patient while adultery was taking place in the surgery and at the doctor's house. She had not entrapped him; the first suggestion had come from him. She had never received any money from him, and had never known Dr. Buchanan anything but "hard up." She had never been attended by any other doctor since two consultations with Dr. Scotland in September, 1924. She had had her first consultation with Dr. Buchanan in March, 1925, and had never before seen him; she had been recommended to him by an old friend. She had had medicine, powders, and pellets from him, and had paid for them as she went along. He had attended her for a gynæcological complaint and varicose veins. She had had £3 10*s.* a week from her husband, £1 from her daughter, and £1 from her son. She had never been expensively dressed. She had only had one fur and Mr. Campbell had given her the money for it. Dr. Buchanan had never given her any present; he had never had any money for himself. At present she was living with her children, and they were all working for their living. She absolutely denied collusion over the divorce proceedings.

Cross-examined, she said she had not spoken to her husband for a year. She had not seen him in Edinburgh after the divorce proceedings. She had been good friends with Dr. Buchanan until June, 1928. She had given evidence in the divorce proceedings to save her reputation. Her husband had paid nothing since the separation except 15*s.* a week for the younger girl. She had given her husband the letters because Dr. Buchanan's cousin had bullied her for them, and she had given them to Mr. Campbell instead. They had just happened to be in her possession that evening; she did not know why she had preserved those two. Misconduct had first taken place in June, 1925; she had made no confession to Mrs. Johnstone in February, 1926, and Mrs. Johnstone's evidence in the divorce case had been false. She had never treated Mrs. Johnstone as a friend; Mrs. Johnstone had done work in the house for money. She had not done everything in her power to facilitate the divorce; she had just sat still and waited. She maintained that her visits to the surgery had been professional, and that she had paid fees, on some occasions to the doctor personally.

In reply to the Legal Assessor, she said that intercourse had taken place in the surgery during surgery hours when other patients were waiting, and during consulting hours at his house.

Miss Margaret Campbell testified to her statutory declaration in which she deposed that she had been on Dr. Buchanan's panel. The date on her card was July 12th, 1924, and the card was signed by Dr. Buchanan's cousin and partner; she had, however, looked on Dr. Buchanan as her doctor. She knew that her mother had consulted Dr. Buchanan frequently and had seen her go into his consulting-room,

and had often called for medicines for her mother. She had taken prescriptions from Dr. Buchanan to the dispenser for her mother. Mrs. Johnstone had done charing for them; she repudiated Mrs. Johnstone's statement that she had said her mother had got a fur coat from Dr. Buchanan.

Cross-examined, she said she had consulted Dr. Buchanan's assistant about four months ago, and was still on the same panel.

In reply to the Legal Assessor: The insurance card was signed for the "doctors" Buchanan, and she had consulted both. She had handed prescriptions for her mother to two dispensers, a Miss Martin and a Mr. Muir.

By Mr. Henderson: Dr. Buchanan had seen her on June 16th, 1926, and his brother on a number of other occasions.

In reply to a question by Dr. Bone through the chair, she said she had paid the dispenser for her mother's medicine.

Mr. Malcolm Campbell, jun., testified to his statement, which declared that he had been on Dr. Buchanan's panel, and had been attended by him at the dispensary on several occasions since October, 1927. He had always understood that his mother was a patient; his mother had told him so, and there were always plenty of medicine bottles in the cupboard with his mother's and Dr. Buchanan's names on them. The date on his panel card was Oct. 26th, 1927.

Cross-examined, he said he was now on Dr. Donald Buchanan's panel but had never consulted him. He had never consulted Dr. Angus Buchanan personally. He did not remember any number on the bottles.

Re-examined, he had gone to Dr. Buchanan because he was the "family doctor."

By Mr. Henderson: His father's doctor was too far away. He did not know his mother had ever consulted Dr. Scotland.

The Defence.

Dr. Buchanan did not appear, as he had gone to Australia. He was represented by Mr. John Henderson, solicitor, who called Mr. R. Wilson Muir, M.P.S., the dispenser at Dr. Buchanan's surgery, who testified to his sworn statement. The prescriptions were all most carefully entered in a book, which was checked daily. He had known Mrs. Campbell and her daughter by sight; Mrs. Campbell had never been a patient and had never had any prescriptions dispensed or paid for any medicine. He had regarded her visits as friendly, and the attitude of the parties had been friendly rather than professional. Her custom had been to call just before closing time and wait until patients had gone. She had dressed like a young woman of fashion; this had been very marked. There was no entry in the prescription book relative to Mrs. Campbell or her daughter, and he recalled no case in which a prescription had not been entered. He described the booking system, and stated that the number was invariably written on the bottle. It was not true that Mrs. Campbell had received medicines from or paid money to him.

Cross-examined, he said he had received all moneys paid and had given them to the doctor at the end of the week. He had never been present at an interview between Dr. Buchanan and Mrs. Campbell; he had gathered from their manner and certain incidents that the relation was friendly and not professional. Once when Dr. Buchanan had been ill and his cousin had been in his place she had refused to see the cousin, saying it was "nothing like that." Other patients invariably went to whichever partner was sitting if one of them was ill.

By Mr. Henderson: The labels on the bottles said "Drs. A. D. and D. C. Buchanan."

By the Legal Assessor: He had been there from 1925 to the end of September, 1927, and his hours had been from 9.30 until he was finished—7 or 8 P.M. Patients walked into the waiting-room and asked him for the doctor they wanted; he showed them by which door to go in, and they went in by themselves. The whole surgery was shut if he went out. The entry in the prescription book had always been made at the time of dispensing the bottle; medicines were not usually made up by the partners themselves so far as he knew, but it was possible for them to dispense at night or in his absence without his knowledge.

Mr. Henderson then read the deposition of Miss Sadie Forbes, dispenser and bookkeeper, still in the employ of Dr. Donald Buchanan. She had never regarded Mrs. Campbell's visits as professional, and there were no prescriptions or fees in the books under her name. The books were most carefully kept. Mrs. Campbell had called near closing time, and on one occasion had bade another patient go in before her as she was not seeing the doctor professionally.

Dr. Donald Campbell Buchanan testified that respondent's father had founded the practice, and that witness had taken it over now that respondent and his family had settled in Australia. Witness knew all his partner's affairs, and the books had been most accurately kept. He was convinced that Mrs. Campbell had never been a patient of Dr. Angus Buchanan. He had first heard of Mrs. Campbell as his cousin's mistress through an anonymous letter in 1926, and had taxed his cousin, who at that time had denied the allegation. Witness had noticed the remarkable change in Mrs. Campbell's turn-out. In 1928 Dr. Angus had confessed and witness had interviewed Mrs. Campbell apart, and she had stormed and sworn and refused to let the matter drop if respondent went abroad. Respondent had said she was determined to ruin him. No suggestion of professional relationship had been made at that time or previously. The son and daughter had been witness's panel patients, and the rule in Scotland was that partners must have separate lists. He had never known a case of a prescription not being entered. He had checked Mr. Muir's prescription book every night; each bottle dispensed was priced. There was no mention of Mrs. Campbell's name in the books of the partnership, which he had searched for the years since 1922. The only entry by Dr. Angus Buchanan on Miss Campbell's panel record was during witness's holiday month.

Cross-examined, he admitted that either partner might attend the other's panel patients. He had got to know Mrs. Campbell by sight when she had accompanied her daughter in 1925. At first she had dressed as an ordinary working woman, but later she had dressed much more richly.

By the Legal Assessor: It was possible to make up a bottle of medicine without making an entry in the book, but he had never known it happen and the dispenser would notice the mess made. It was also possible for one partner to receive cash fees without paying them to the partnership.

By the President: Although his partner had deceived witness about the liaison he believed that he had now made a clean breast of everything.

By Sir Robert Bolam through the chair: The son's card had been signed by Dr. Angus Buchanan, but by the usual regulation of the National Health Insurance he had been transferred to witness's panel when witness took over the practice, as he had not removed his name in response to the routine notice.

By Dr. Brackenbury, through the chair: The ledgers were before the Council for the period covered by the two-guinea bill, and no such entry was to be found in them. Patients seen at the house took the prescription down to the dispensary.

Miss Agnes McDougall, district nurse in the neighbourhood since 1924, testified to knowing the parties and noticing the change in Mrs. Campbell's appearance and the laundry she had hung out in 1925. She had seen Mr. Campbell tap at the window of Mrs. Campbell's room and gain admittance since the divorce.

Mrs. Margaret Johnstone said that she had known the Campbells for 13 years, and had been very intimate with Mrs. Campbell for many years. Mrs. Campbell had worn a shawl at that time and been a poor woman. Dr. Angus Buchanan had never been

the Campbell's doctor. She had introduced them in her own house in a friendly way, not in the least professionally. In 1926 Mrs. Campbell had confessed that the relations were and always had been guilty, and that they had started from a meeting in the street out of surgery hours. Mrs. Campbell had then said that she intended to squeeze the doctor dry and keep him in her hand till she had, and that her separation from Mr. Campbell had been due to her relationship with the doctor. After 1926 new furniture and new clothes had appeared. The neighbours had been outraged by her conduct. Dr. Buchanan had called openly in the forenoon. Witness had never nursed Mrs. Campbell, and had never been in the house as a paid charwoman or servant. She had followed Mrs. Campbell, and had seen her meet the doctor on several occasions in different streets; she had set off at twenty to three every day and returned about six. She had followed Mrs. Campbell and seen her meet the doctor every day for about three months.

Mr. Henderson put in a sworn statement sent by Dr. Angus Buchanan from Australia. He stated that he was married and had three children under 14. He confirmed the material facts of the case and declared that he had been introduced to Mrs. Campbell by a Mrs. Johnstone. Their relationship had been purely social. Mrs. Campbell had first suggested intercourse and had threatened to expose the affair to his wife when he had tried to break it off. She had demanded money and received about £2 a week for two years. When he had told her he was going on a holiday she had declared he should not go unless he paid for a holiday for her. Her demands had become more insistent and finally he had told his wife all about it. He had at no time acted as medical adviser to Mrs. Campbell or her family.

Mr. Henderson addressed the Council, submitting that the case against his client had not been proved, that the affair was simply that of a paid mistress who was willing to do her best to ruin the man who had discarded her. The evidence for professional relationship was confined to the relatives and rested on the question of medicines. It was quite true that medicines could have been made up by the practitioners themselves, but the evidence of these relatives was that the medicines had been made up by the dispenser, and the money tendered to him on many occasions. It was incredible that the name of Mrs. Campbell should invariably have been omitted from the books by that dispenser, years ago, before any question of proceedings had arisen. Mrs. Campbell's meeting with Dr. Buchanan had nothing to do with the fact that her daughter had previously joined the panel of his partner. By the time the son joined Dr. Buchanan's panel the relationship had existed for two years.

Mr. Harper briefly addressed the Council. After deliberation in camera the President announced that the Council had found the charge proved to their satisfaction, and directed that the name of Dr. A. D. Buchanan be erased from the Register.

Advertising in India.

On Wednesday, Nov. 27th, the Council considered *the Case of Ratilal Shivlal Shah*, registered (Colonial List) as c/o Umjamshi S. Shah, High Court Pleader, Rajkot, India, M.B., B.S. 1922, U.Bombay, who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner, you have advertised for the purpose of obtaining patients or promoting your own professional advantage—viz.: (1) By the issue of two leaflets in respect of two medicines concocted by you, to wit 'Shwetanjan' and 'Muktanjan.' (2) By calling your private home or dispensary 'Dr. Shah's Eye Hospital' or 'Dr. Shah's Ophthalmic Hospital.' (3) By inserting, or sanctioning the insertion, or acquiescing in the insertion, in the March, 1928, number of a Gujarati paper called *Sharda* of an advertisement of the above-mentioned remedies. (4) By inserting, or sanctioning the insertion, or acquiescing in the insertion, on another page of the issue of the said paper *Sharda*, a portrait of yourself with a laudatory notice below such portrait. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The Council's attention had been drawn to this case by the Bombay Medical Council. Mr. Shah did not attend but was represented by Mr. H. F. Parfitt, of Messrs. Minet, May and Co., solicitors. The Council's solicitor related the facts, and both solicitors addressed the Council. After deliberation in camera the President announced the decision of the Council as follows:—

"I have to announce that the Council have decided that they will not now proceed to decide whether the facts alleged against Mr. Shah in this notice of inquiry have been proved or have not been proved, on the ground that the materials for a decision are insufficient. They will, therefore, ask you both to appear in November of next year, and to bring up further evidence. Mr. Harper from the Bombay Medical Council, and Mr. Parfitt, on behalf of Mr. Shah, if he has anything further to say then."

The Council received a report from the Executive Committee that the name of Ewen Cameron McLeod had been removed from the Register of the College of Physicians and Surgeons of Manitoba. The Committee was satisfied that Mr. McLeod had not been deprived of his qualification on the ground of his adoption of any theory of medicine and surgery. It was moved by the Chairman of Business, seconded by Sir John Moore, and agreed that the name of Mr. McLeod be removed from the Register in respect of the qualification of M.C.P. & S. Man. 1926, therein recorded.

Restorations.

The President announced that the Registrar had been directed to restore to the Medical Register the names of Bernard Wilfred Goldstone and David Davey Rosewarne.

Association of a Practitioner with a Company Trading in Secret Remedies.

The Case of John Forrest Hamilton, registered as of Mexborough House, Mexborough, Yorks, M.B., Ch.B., U.Glasg., 1919, who was summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner: (1) you have associated with a person or persons (unqualified) for the purpose of treating persons in respect of matters requiring professional discretion or skill; (2) having acquired a part interest in certain secret remedies, preparations, and medicines from unregistered persons, you are engaged in association with them in the sale for your own profit of such secret remedies, preparations, and medicines. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainants were the Medical Defence Union, represented by Mr. Oswald Hempson. Respondent appeared in answer to his notice.

Mr. Hempson read out the prospectus of a company called "Lunvitre, Ltd.," of which the address was that of Dr. Hamilton, and of which Dr. Hamilton was a director. The memorandum of association showed that Dr. Hamilton was associated with two other directors, one of them a miner, and that the objects of the association were to acquire and trade in secret preparations and medicines for the treatment of tuberculosis of the lungs and other disorders, and such other secret preparations as seemed fit to the company. Another document was signed by Dr. Hamilton as secretary of the company. Part of the defence was that no trade had been carried out. The Medical Defence Union had no interest in waiting until the offence had become indisputable; as soon as they heard of the intention they placed the matter before the Council for a ruling. Mr. Hempson argued that it was infamous for a professional man to have any interest in the sale of medicines, particularly for a disease like tuberculosis, where general treatment was of such importance. A Mr. Webster, chemist, had written to the company about the "Lunvitre" treatment for tuberculosis, and had received a reply

signed by "J. Hamilton." The reply was typewritten on business notepaper with all the usual company notices in its letterhead and a highly coloured representation of a Red Indian's head. The letter undertook to execute a commission in a month's time, and claimed marvellous results for the medicine, referring to "hundreds of testimonials." In his defence Dr. Hamilton had quoted from correspondence with his lawyer and with the British Medical Association, but had torn his quotations from their context. The Registrar had written to Dr. Hamilton in August, 1929, warning him that association with the proposed company would be highly undesirable for a registered practitioner. Dr. Hamilton had replied at some length on Sept. 13th, 1929, admitting that he was chairman of directors of a limited company, but maintaining that no harm had been done since trading had not yet been commenced, and that his position was comparable with that of any doctor holding shares in a trading concern. He declared that he would not prescribe for his own patients any product marketed by the company. On Sept. 19th the Registrar had replied as follows:—

"J. F. Hamilton, Esq., M.B.

"DEAR SIR,—In reply to your letter of Sept. 13th, I regret if it appears that mine of the 27th ult. was not sufficiently clear. There are certain practices which, without bringing a medical man within the precise terms of the warning notices, may nevertheless be considered contrary to the best interests of the profession, and to be deprecated by his fellow practitioners of good repute and competency. Amongst these has been considered the pledge of secrecy where the composition of remedies is concerned, and the association, whether openly or otherwise, with a concern devoted to their manufacture.

"The Council have never attempted to control the field of investments open to a medical practitioner, but, without introducing any element of compulsion into their opinion, they feel that in the best interests of the profession it would be wiser for a medical practitioner to seek a return for his capital in directions other than patent medicines. If, notwithstanding, he is determined to keep up his connexion with a proprietary company, he is at least requested to see that no use is made of his name and qualifications upon official stationery, nor that his name and qualifications are made use of for the purpose of advertising the products.

"Should your association with the direction of the proprietary medicine company become known to your professional colleagues, you will almost certainly be made aware of their disapproval, and may probably be made subject to complaints to the Council regarding your action. The legal fact that the company is technically a separate entity would not protect you against such complaints.

"Yours faithfully,

"NORMAN KING,

"Registrar."

The Medical Secretary of the British Medical Association had noticed the company's advertisement and had written to Dr. Hamilton, as a member, warning him that it was contrary to all tradition that a medical man should have any interest in the sale of patent medicines. An accountant had replied on behalf of Dr. Hamilton on Sept. 9th arguing in justification: (1) that the company was a separate legal entity; (2) that Dr. Hamilton had never proposed to take any step which would bring business to the company by virtue of his medical degrees; (3) that the company did not propose to use as advertisement the fact that one of the directors was a medical man. The Medical Secretary had replied that in view of the general opinion of the profession he was sorry that Dr. Hamilton had taken this position, although the safeguards would appear to meet any objections of the General Medical Council.

Dr. J. Neal, Secretary of the Medical Defence Union, testified to his statutory declaration confirming the facts set out by Mr. Hempson and the steps taken by the Union to investigate them.

Cross-examined by Dr. Hamilton, Dr. Neal said that it was not necessarily derogatory for a medical man to hold shares in a trading firm or, further, to have some say in its direction.

Re-examined, he explained that the nature of the company and to a lesser extent the degree of the association would influence his opinion about the association of a medical man with a company.

Mr. T. Gething, an accountant, of Mexborough, testified to his declaration describing how he had bought a bottle of "Lunvitre" from Mr. G. H. Jones, who had told him that the company had also remedies for rheumatism and gall-stones which would be on sale the following week. He had also said that Dr. Hamilton's coachhouse and stables had been converted into a factory, and that as Dr. Hamilton knew where to get the drugs the cost was reduced. An old lady and a man had been present at this interview. He declared that 105, Market-street was Dr. Hamilton's private address, and produced the entry in the Voter's Register in confirmation. There was no plate on the door of that house. Mr. Jones had said that the cure had been given to him by an old Indian in Canada, and the Indian's head would be the trade-mark of the company's products.

Cross-examined, Mr. Gething denied that he was collector for a firm of doctors who had been asked by Messrs. Hempson to collect evidence, and denied that he had a grudge against Dr. Hamilton as a result of accusations brought about him some years ago. He had never heard any doctor say it would be worth £500 to him to get Dr. Hamilton out of Mexborough. He had gone to Mr. Jones's house about a debt with which he was dealing and had spoken about that account before mentioning "Lunvitre." He reiterated the statements in his declaration, particularly that Mr. Jones had said that both he and Dr. Hamilton saw patients. Mr. Jones had not made the bottle up for him as a favour; it had been already made up.

The bottle was produced. The label contained the words, "The great remedy for all lung troubles. Manufactured solely by G. E. Jones, 40, Doncaster-road, Mexborough."

Mr. Sinclair, M.P.S., deposed that he was a chemist and had traded with Mr. G. E. Jones for two or three years. Mr. Jones had purchased pure glycerin, syrup of mulberry, oil of juniper, Friar's balsam, and sal volatile. The first two were ingredients for the "cure." Since the company had been formed, Mr. Jones had told him that the recipe was obtained from an American Indian, and that an Indian was to appear on the label. He had referred to a film which had been prepared to advertise the remedy, and said he had entered into partnership with Dr. Hamilton for the preparation of the remedy, its factory to be at 105, Market-street. Witness was familiar with Dr. Hamilton's signature on prescriptions, and thought the signature on the letter from "Lunvitre, Ltd.," closely resembled his, though the initials were not quite as usual.

Cross-examined, he asserted that Mr. Jones had repeatedly used the word "cure." He had supplied Mr. Jones with glycerin and syrup within the last seven days. He denied ever discussing the cure with respondent.

In reply to the Legal Assessor, he said there were some outbuildings attached to 105, Market-street.

The Defence.

Dr. Hamilton gave evidence on his own behalf. He declared that for eight years he had been persecuted by a medical partnership who, he believed, were the informants in this case. This firm had complained to the Medical Defence Union eight years ago that respondent was touting for patients. The Union had, however, failed to get evidence. The firm had complained to the local ethical medical society and had had him boycotted in his absence; after investigation he had been completely cleared and invited to join the society. An attempt had been made to exclude him from the local hospital by underhand means. He had been approached by Mr. Jones, a patient of his, who had asked for help. Out of sympathy, respondent had offered to give him a chance, intending to get out of it as soon as Mr. Jones

was launched. He had signed such documents as the chartered accountant had put before him, and had had no idea that the matter could ever become public. The accountant had advised him that the position was quite in order and comparable with that of any doctor who held shares. The letter from Dr. Cox had arrived just as he was going abroad on holiday, and he had handed it to the accountant to answer. On respondent's return from holiday the accountant had handed him Dr. Cox's reply with the remark that everything was all right. Respondent had told the accountant that if there was to be any statement in the public press he would not have anything to do with the company. The announcement had apparently been put in as a matter of local news interest. He had understood from the Registrar's letter that this was not an offence against the Council's standard. Had he understood that it would be regarded as infamous conduct he would have severed his connexion with the company at once. He knew the constituents of the medicine and used many of them, but not in a form which would connect with "Lunvitre." There had never been any suggestion that he should visit any customers as patients. The manufacture and sale had been held up since Sept. 12th until this inquiry had been settled. The premises he had leased to the company had been a boat-building depôt adjoining his garden, and bought by him a little time ago. His house was known only as "Mexborough House" and had no number; he had had no idea until that day that he was registered as of "105, Market-street." His coachhouse and stables had been turned into a garage. The building leased to the company had no connexion with his house and had a brass plate affixed to it according to law; this was 100 yards at least from his professional plate, and was not visible from the road.

Cross-examined by Mr. Hempson, respondent admitted having signed the letter to Mr. Webster, but said he had disguised his writing on purpose. No appointment of managing director had been made; the only manager was Mr. Jones. He denied that the letter to Mr. Webster was his letter; he had taken very little interest in the whole thing. He was not aware that Mr. Jones had twice been convicted and imprisoned for fraud, and a few weeks ago had been arrested for street-betting. Nor did he know that Mr. Jones had visited patients; he disclaimed all knowledge of letters, produced by Mr. Hempson, in which Mr. Jones gave advice, advertised the patent remedies of the company, and mentioned respondent's name. These letters were dated October of this year. Mr. Jones had assured him that he had never said anything to connect respondent with the company. He admitted that a large consignment of bottles and corks had been ordered and paid for by a cheque drawn by respondent on "Lunvitre." As a doctor he agreed that it was most improper to encourage self-medication, and that tuberculosis ought not to be treated by a collier. He knew of several people who had made rapid strides when taking the remedy, but had never said it was a wonderful thing and had no opinion one way or the other on its merits. Permission had been refused to use the Red Indian's head as a trade-mark in July or August. A film representing the rescue of a Red Indian by Jones had been made, with a view to ultimate advertisement; respondent had assisted at this show. He had looked upon it as a joke. Jones had told him he had hundreds of testimonials; respondent had seen a box purporting to be full of letters and had looked at two or three of them. He denied any association with Jones in selling the remedy or treating patients; that had been the intention had no objection been raised, but as neither sale nor treatment had actually occurred he refused to admit the charge.

In reply to the Legal Assessor: Jones had sold the recipe to the company for 50 shares; the actual money had never been put up. The only cash subscribed was respondent's £50; he and Jones would each receive half the profits, and it was to their interest to make as much profit as possible. He had signed what the accountant had asked him to sign, trusting to the accountant, and had taken no interest to see what he was signing. The company was to pay £1 a week inclusive of rates for rent of the premises, but no money had yet been paid. No rent was to be charged until trade began. Those premises were to the side of his house and the only means of access to them was over land belonging to him.

By the President: He did not know whether he had expected interest on his £50 or not. The company had a banking account of which respondent was in control. Jones had had no control of it at any time. He had put another £20 into the account beyond the original £50; this was to provide Jones with more shares. Jones was to take over the shares gradually.

A member: "Does Dr. Hamilton, knowing the composition of 'Lunvitre,' believe that it has any value in tuberculosis?"

Dr. Hamilton: "I have made it a rule never to express any opinion, but if I am compelled to answer that question I would say, Yes, I do believe it would be of value."

Mr. G. H. Jones testified to his statutory declaration, describing the visit of Mr. Gething. He admitted that in obliging Mr. Gething with a bottle of medicine he had violated his agreement with the company; for this he had been reprimanded by the company. He denied all the other episodes related by Mr. Gething, that he had mentioned Dr. Hamilton and that any advertising had been carried on. He had known on May 23rd that the Indian's head could not be used as a trade-mark, and was not likely to have told Mr. Gething that it would be the trade-mark. He had been 20 years with his last employer and produced a testimonial. He had used the word treatment but never "cure" in connexion with the remedy. He had bought nothing from Mr. Sinclair since the receipt of the warning letter from the Council. He had written the letter to Mr. Webster himself and had had no advice about it; respondent had signed it in a great hurry without reading it, and witness had remarked that the signature was unusual.

Cross-examined by Mr. Hempson, witness said he could not remember whether any letters had passed between him and respondent before the formation of the company. One hundred envelopes had been printed with the company's name and were kept at Doncaster-road. He was the managing director of the company, but could not explain why he did not sign the letters of the company. He had copied the letter to Mr. Webster; the language was his own. He had not sold a bottle of "Lunvitre" since Oct. 12th. He did not see that he was compelled to account to the company for the money paid him by Mr. Gething. He went round to treat cases of hæmorrhage; Dr. Hamilton knew this. He had never spoken at meetings, but had been on the platform at meetings where tuberculosis was discussed. Nobody had ever called him Dr. Jones. The date of his testimonial was Feb. 1st, 1928.

Dr. Hamilton read statutory declarations from Mrs. Jones and Mrs. Rymer, a midwife, confirming Dr. Hamilton's account of the interview between Mr. Jones and Mr. Gething, and put in medical certificates accounting for the absence of these witnesses.

He then addressed the Council on his own behalf, emphasising that he had had no idea that Jones had sold any bottle other than the one supplied to Mr. Gething or had purchased any chemicals since the receipt of the warning notice. He admitted signing the letter to Mr. Webster carelessly and in a hurry, but maintained that he had had no idea of its contents. He pleaded that it was a letter within the trade and no evidence of advertisement to the public. The disguised signature was an honest attempt to avoid bringing his profession into the business. Since seeing Mr. Jones in the box he no longer felt able to claim that Mr. Gething's evidence was untrue, but he submitted that what Mr. Jones had said did not incriminate him. It was his last wish to do anything

degrading or dishonourable to his profession. There had been no evidence of any sale of medicines with the knowledge and consent of the company. He quoted again the letter to the accountant from the Secretary of the British Medical Association saying, "I have carefully considered the points you raise, and the safeguards which Dr. Hamilton has taken seem to me pretty adequately to cover any objection which might be taken by the General Medical Council." He humbly submitted that the Council was in honour bound by the letter of its executive officer. Respondent had definitely asked whether his association with the company would be regarded by the Council as infamous conduct in a professional respect. The Registrar had replied in a manner which respondent had unhesitatingly interpreted as a negative. This case was without precedent, and it was very difficult for a young practitioner to determine what might and might not be done. The scheme had been foolishly and carelessly undertaken; but he had acted in good faith, and had taken advice from a chartered accountant and a solicitor. If they had been right, that was his justification; if they had been wrong it showed the difficulty of finding out the Council's wishes. No matter what the decision of the Council, he would sever all connexion with the company.

Mr. Hempson addressed the Council. The respondent had, he said, been warned both by the British Medical Association and by the Registrar. Dr. Cox's letter had been addressed to the accountant, and under those circumstances might well hesitate to use the strong terms of condemnation that might be directed to the doctor himself. Jones had admitted that the letter to the chemist had been written from a draft, and it was obvious that the draft had not been composed by Jones. In Mr. Hempson's opinion the original defence was not an honest one; Dr. Hamilton had not at first realised the seriousness of his position. A more heinous case of association with unqualified practice could not be conceived. Dr. Hamilton had put up money to help a well-known quack to exploit a secret remedy for one of the most fell diseases in this country, and thus to prevent people from getting adequate treatment. While the charge as a whole had been denied, every point in it had been separately admitted.

The President announced that the Council had found the charge proved to their satisfaction and had directed the Registrar to erase Dr. Hamilton's name.

Alleged Canvassing.

The Case of Nagib Iskander, registered as of 96, Primrose-lane, Hall Green, Birmingham, M.B., Ch.B., 1926, U.Birm., who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner, you have systematically canvassed for patients by means of agents, and in particular: (1) on or about March 1st and April 29th, 1929, so canvassed Mrs. Elizabeth Howell; (2) on or about March 21st, 1929, so canvassed Mrs. Gladys Martin; (3) on or about March 21st, 1929, and about a week after, so canvassed Mrs. Emily Hall; (4) on or about April 18th, 1929, so canvassed Mrs. Dora Lilian Harrison; and (5) on or about April 20th, 1929, so canvassed Mrs. Gwendoline Ruth Morgan; and that in relation thereto you have been guilty of infamous conduct in a professional respect."

The complainants were Mr. V. A. Goldman, M.R.C.S. Eng., Mr. P. Carroll, L.R.C.P. Edin., and Mr. C. C. Blair, M.B. Glasg., represented by Mr. Goldman. Mr. Iskander attended in answer to his notice, accompanied by Mr. Davis, of Messrs. Bulcraig and Davis, solicitors. Mr. Goldman proceeded to lay the facts before the Council, and read five statutory declarations from the five ladies mentioned in the charge; none of them was present.

At this point the President, having consulted the Legal Assessor and the Council, announced that there was no evidence connecting the charges with Mr. Iskander, and the case was dismissed.

(*To be continued.*)

Medical Societies.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

AT a meeting of this Society in London on Nov. 29th, with Dr. F. J. H. COUTTS, the President, in the chair, papers on the

Urinary Excretion of Novarsenobillon in Syphilis, and its Relation to Toxic Effects

were read by Dr. N. L. LLOYD and Mr. V. E. LLOYD. Despite the wide use of salvarsan and its derivatives during the last 15 years, said Dr. Lloyd, the fate of these compounds in the body was not yet fully understood, though it was known that a considerable proportion of them was excreted soon after injection, principally in the urine and fæces. The inter-relation of intensity of therapeutic effect, rate of elimination, and toxic manifestations was of considerable importance. There was now a good deal of evidence of deterioration of hepatic efficiency following the use of these compounds; jaundice sometimes appeared, and might continue even after treatment was stopped. The chief aim in treating syphilis was to attain the maximal therapeutic action with the minimum of toxicity. At the beginning of treatment any reliable test which would reveal patients who were specially susceptible to toxic effects must be of value in deciding dosage. One of the practical objections to the present tests was that they took so much time that employers had to know why abstention from work was necessary. Accordingly Dr. Lloyd and his brother had been led to use a colour reaction, described by Abelin in 1911, which was very simple and did not need any special apparatus. Abelin's test depended on the conversion of the arsenobenzol into a diazo compound and the subsequent linking of this body to some member of the phenol or naphthol groups with development of a colour. Patients receiving salvarsan showed its presence in the urine five to ten minutes after injection, and Abelin had demonstrated that excretion continued as long as seven hours. Elimination was found to be more prolonged in tertiary syphilis and neurosyphilis. Absence of elimination should lead to careful examination of the patient before going on with treatment. Several workers had shown, however, that the rate of excretion did not decline in regular progression. It was noted that the drug disappeared rapidly from the blood stream, but it could not be demonstrated in the cerebro-spinal fluid except after massive doses in dogs. The fæces gave negative reactions.

In outline the test was as follows:—

Five c.cm. of the fluid to be examined was placed in a test-tube and cooled in running water or ice. To this was added 0·5 c.cm. of 5 per cent. hydrochloric acid, and after a few minutes 1 c.cm. of a 0·5 per cent. solution of sodium nitrite. The solution was kept in running cold water for ten minutes. In a second test-tube was placed 4 c.cm. of a 10 per cent. solution of resorcin in water and 1 c.cm. of 10 per cent. sodium hydroxide. Then the contents of the first test-tube were added to those of the second tube. The presence of arsenobenzol was shown by the development of a colour which varied from red to reddish-brown, and this colour appeared immediately. Experiments showed that a red colour developed in watery solutions of a strength of 1 in 20,000. By looking through a depth of fluid of 5 cm. with transmitted light, a positive result could be seen in a dilution of 1 in 100,000. With urine, however, one could not be sure of a definite result in a higher dilution than 1 in 50,000.

It was not essential that the urine should be tested immediately it was passed; urine left as long as ten days gave as good a result as immediately after it was voided. The following organic preparations, tested in vitro in a strength of 1 in 1000, had given markedly positive results: novarsenobillon (N.A.B.), metarseno-argenticum, metarsenobillon, stabilarsan,

sodium silver salvarsan, kharsulphan, sulpharsenol. Results were negative with watery solutions of atoxyl, stovarsol, tryparsamide, bistovol, and neobistovol. The investigation of phenacetin had proved interesting. In vitro no colour developed, but the urine voided up to a period of three to four hours after an oral dose of grs. 15 phenacetin gave an almost identical red colour with this test. In short, Abelin's test was reliable but not absolutely specific. It did not indicate the presence of arsenic.

Mr. V. E. LLOYD dealt with the clinical application. To ensure that the bladder was empty and to see whether elimination of a previous dose had ceased, a specimen of urine was collected from each patient before injection of N.A.B. Supplied with three 1 oz. bottles, patients were told to bring back on the following day a small quantity of the first three consecutive voidings. 1330 tests were performed in the investigation of 397 injections, and a qualitative scale was used to express the results. Positive results were obtained within an hour, and excretion could easily be followed up for 24 hours, or longer. The reaction was usually markedly positive from two to six hours after 0·45 or 0·6 g. N.A.B. Injection of 0·3 g. yielded results slightly less intense.

After an account of a series of cases tested Mr. Lloyd said it soon became apparent that there was a close association between inefficient urinary elimination of N.A.B. and toxic effects in the patient. It had been found in rats that the toxicity of organic arsenical compounds of the trivalent and pentavalent groups was inversely proportional to the rate of excretion in urine and fæces. In man delayed jaundice following injection of organic arsenical compounds was well known as a late toxic effect, and it seemed that the power of the liver to deal with these substances grew less as treatment progressed. During these investigations five cases of salvarsan jaundice and six of exfoliative dermatitis were tested and in none of them could any elimination of N.A.B. be detected. Severe toxic jaundice occurred in five cases, and in none of them had elimination been consistently good with the Abelin test. Among 36 cases in which excretion was known to be unsatisfactory, toxic effects were noted in 19. The intimate relation between toxic jaundice and indifferent excretion raised the suspicion that at least some cases of salvarsan jaundice were due to the action of the aromatic amino radicle in the salvarsan compounds, rather than to the arsenic itself. Toxic jaundice, and even "acute yellow atrophy" of the liver, had been reported following oral administration of atophan, a compound which did not contain arsenic. Jaundice was an exceptional result of poisoning by inorganic arsenic, and chemical analysis of liver from patients who died from salvarsan jaundice did not show any undue accumulation of arsenic. Animal experiments had demonstrated that the most rapidly excreted arsenical compounds tended to be the least effective, probably because of the brevity of their action.

Discussion.

Dr. DAVID WATSON thought these contributions were of great importance. This test seemed to be the simplest yet suggested, and he was anxious to put it into operation.

Colonel L. W. HARRISON suggested that the reason for the delayed excretion of the amino-benzol radicle might be that it had been seized upon by the liver-cells. For years he had protested that one should not speak of arsenical but of arsenobenzol jaundice, underlining the last syllable. This idea was strongly supported by the likeness of these cases in many respects to poisoning by trinitro-toluene and by histological examination of the liver. If this supposition were correct, we might have in the Abelin test a means of rapidly determining the value of any measures to avoid the amino-benzol group being taken up by the liver-cells. He had tried previous administration of glucose for this purpose; patients so treated might show by the Abelin test a more rapid excretion than did others.

Dr. H. C. SEMON did not remember to have seen toxic jaundice or exfoliative dermatitis following the use of salvarsan; but there were other symptoms of arsenical absorption, such as neuritis and changes in the skin, following long-continued administration of the drug by the mouth.

Major E. T. BURKE said it would be an excellent routine in clinics that, even in cases in which the kidneys appeared to be normal to ordinary tests, Aberlin's test should be carried out on every patient after he had received one or two injections, since the renal excretory function might be abnormal only in respect of arsenobenzol. He was much interested in the references to jaundice. He attributed the rarity of jaundice in his practice to two facts: (1) he used stabilarsan as a routine, and he thought that the glucose, being dissolved in an isotonic solution, acted as a barrier against toxicity; (2) he gave arsenobenzol and bismuth alternately, not concurrently. He would now try the Aberlin test on some recent cases of jaundice which he had seen. He had observed bismuth jaundice in a number of patients who had had no arsenobenzol at all. It would be useful to know what proportion of an intravenous dose of arsenobenzol was therapeutically utilised. Levaditi's experiments seemed to show that arsenobenzol did not exert a direct lethal effect on the organism. These contributions were a step towards establishing the ideal dosage—i.e., one which reduced elimination to a minimum whilst retaining the maximal therapeutic effect.

Dr. H. M. HANSCHELL spoke of a case six years ago in which a man was admitted to hospital diagnosed as having a granular kidney, and treated with a dose of 0·3 g. N.A.B. because of a positive Wassermann. Two days after the injection he died, apparently because of the kidney trouble. Since then, however, Dr. Hanschell had administered stabilarsan to many subjects of renal disease (as shown by albuminuria, casts, &c.) apparently without any ill-effects. He thought, therefore, that the fear of administering arsenobenzol in the presence of renal disease was largely exaggerated. His practice had been to administer stabilarsan and bismuth at the same time, and jaundice had occurred in only one case.

Dr. B. B. SHARP asked whether, if Colonel Harrison was right in thinking that glucose protected the liver-cells from the benzol radicle, it would not increase the renal excretion in a previously bad excretor. It would be well to carry out ordinary excretory tests on the kidney in all bad excretors, to see if the kidney was holding back other substances also.

Dr. DAVID NABARRO thought that though the test was very valuable, it would be difficult to carry out in children. Children's organs were usually in much better working order than those of their elders, and toxic symptoms following the use of arsenicals were less likely owing to rapid elimination of the drug.

The PRESIDENT felt that the test would prove valuable. The chemistry of the body was still largely a closed book. It had been a matter of speculation whether any portion of the arsenobenzol compound passed through the body unchanged. In some cases, it appeared, the test was quite negative, and this suggested either a decomposition so complete that none of the benzol radicles passed into the kidneys, or alternatively a very complete absorption by some of the cells of the body.

Dr. N. L. LLOYD, in reply, said that no work had been done by his brother and himself on the effect of giving glucose in improving the voiding of the product by bad excretors. They had tried sodium thiosulphate without success. Three of the five severe cases of jaundice in the clinic had not had any bismuth.

Clinical Cases.

Dr. HANSCHELL showed two patients.

The first was a man who, 20 years ago, acquired a primary chancre. Sixteen years ago his hair began to fall out, and apparently he had had no treatment. He had now received 15 injections of stabilarsan and bismuth. Three weeks after this treatment ceased the man returned with an acutely inflamed tongue. A week later still he developed severe

jaundice. The Wassermann reaction was still strongly positive, and the question was whether the condition of the tongue was due to syphilis or was a later arsenical manifestation. This was the first case in 3000 given stabilarsan by him which had developed jaundice after it.

The second patient was a Chinaman, who came from his ship with the diagnosis of acute syphilitic myelitis. He was unable to stand or work. He also had a Hunterian chancre on each eyelid, hard and firm. The knee-jerks were entirely absent; the pupils reacted to both light and accommodation. He had an acute attack of beri-beri. No spirochætes had been found, and antisyphilitic injections had not produced any effect.

Dr. SEMON thought that in the first case the tongue was syphilitic.

JOINT TUBERCULOSIS COUNCIL.

AT a meeting of the Council held on Nov. 16th, Sir HENRY GAUVAIN presiding, the hon. secretary, Dr. ERNEST WARD, gave an account of the present position of the scholarships in Canada and America next year offered by the Sun Life Company. A selection and management committee was appointed as follows: Sir Henry Gauvain (for the Ministry of Health), Prof. Lyle Cummins (to represent the National Association), Dr. Lissant Cox, Dr. G. Jessel, and Dr. Ward. The following memorandum was adopted:—

Improvement of the Tuberculosis Service.

The efficiency of the tuberculosis service varies widely in different districts, but backward areas are being improved by wise stimulation from headquarters. Supervision should not be used so as to hamper individual initiative or impede experimental methods. The chief factor in success is the personality and ability of tuberculosis officers and superintendents of sanatoriums, and to secure this remuneration sufficient to attract good officers is all-important. An indifferent officer fails to obtain the confidence and esteem of the general practitioners on whom so much depends.

It is better to have fewer and better-paid officers with larger areas that a large number of poorly-paid men and women of mediocre capacity. Rural areas of 250,000 population and urban areas of 350,000 can be managed by one whole-time officer, with adequate medical and clerical assistance, and would provide sufficient remuneration. The service should be graded so that those who had acted as assistants might become higher-salaried, whole-time, consultant tuberculosis officers or senior sanatorium superintendents. Superannuation schemes should be generally adopted, or so arranged that an officer does not lose by transference to another district.

The tuberculosis officer and sanatorium superintendent should have at their disposal facilities for diagnosis, such as an X ray outfit, and for special forms of treatment, such as light and artificial pneumothorax. Each tuberculosis officer should have hospital beds. Dispensary and sanatorium officers should be first and foremost clinicians, but should have a public health outlook. Facilities to attend post-graduate courses are of the highest importance. In certain circumstances, where the sanatorium belongs to the authority responsible for the district in which it is situate, it may be advantageous for the medical superintendent of a sanatorium to be responsible for the tuberculosis work in the vicinity of the institution as part of his whole-time duties. It is not intended that this should apply to sanatoriums other than those under direct control of local authorities.

The practitioners' sense of responsibility in the diagnosis, prevention, and treatment of tuberculosis must in no way be impaired, and it is the first duty of dispensary and sanatorium officers to ensure this. One of the most helpful qualifications for these officers is to have been themselves in private practice. Any improvement in the tuberculosis service is closely bound up with the preliminary training of men entering this service, and with the education of medical students and general practitioners in tuberculosis.

A memorandum on the notification of tuberculosis was also adopted. Dr. Lissant Cox undertook to prepare an investigation on the fate of delicate children in tuberculous households. The Research Committee suggested as a further inquiry, the Occurrence of Acute Tuberculosis in Infants and Children under 5 Years of Age. Dr. W. Brand reported that the course in X ray work at the Brompton Hospital was already fully booked; a second course was being arranged after Christmas.

Reviews and Notices of Books.

PRACTICAL LOCAL ANÆSTHESIA.

Its Surgical Technique. Second edition. By ROBERT EMMETT FARR, M.D., F.A.C.S. London: Henry Kimpton. 1930. With 268 engravings and 16 plates. Pp. 611. 42*s*.

THE first edition of this book appeared nearly seven years ago. Since that time the use of local analgesia has extended considerably and fresh drugs have been brought into play, tutocain, for example, and novocainborate. The value of the book, however, does not depend so much on its being up to date in detail, but on the excellent way in which the broad principles involved in the practice of local anæsthesia are enunciated and explained by the author. His forecast is that "unlike the past, the future will find available individuals who are equipped to offer to patients the greatest merits that local anæsthesia possesses. These surgeons will not only be able to anæsthetise thoroughly the various regions of the body with minimum discomfort to the patient—but will, in addition, realise the full significance of surrounding and protecting the patient with every available artifice essential to its successful use. This concept embodies a large variety of factors. It demands the coöperation of every individual who—in any manner, comes into contact with the patient, the office force, hospital managers, nurses, interns, equipment and, indeed, every factor entering into the patient's environment from the time of his first visit till he is discharged." This statement may appear overloaded, but there is no doubt that attempts at local anæsthesia often meet with only partial success because of the lack of importance attributed to apparently irrelevant accessories. The stage in fact must be perfectly set, and all, not only the chief, actors thoroughly trained in their parts when a conscious patient is being handled. It is from this point of view that the combination of powerful sedatives with local anæsthetics is so important and one may well believe that the success of the latter will be enhanced and their use made more popular by familiarity with such agents as avertin and paraldehyde. The author, however, rightly lays stress on the necessity for the surgeon who wishes to succeed with local anæsthetics being proficient in operating with them on perfectly conscious patients. The method is, in fact, often brought into disrepute by its occasional practice by men not versed in its niceties. As the author writes: "Surgeons of repute would, without doubt, freely admit that none but the most perfectly trained experts should be allowed to administer general anæsthesia, yet without any special training or experience in the use of local anæsthetics they appear to be quite willing to proceed to use them upon their patients." Referring to the early occurrence of pain after operations under local anæsthetics, the author recommends the giving of morphia hypodermically before the patient leaves the table. In wounds which are to heal by granulation, quinine-urea hydrochloride 1 in 600 should be liberally injected as a prophylactic against after pain. Opium is to be used freely during the first 48 hours. All details of technique are fully discussed and illustrated by the numerous diagrams. The author is, of course, an enthusiast for the method of local analgesia, but his support of it is logical, and he does not fail to point out the care and patience which it demands for success.

PRACTICAL SURGERY.

Beiträge zur Practischen Chirurgie. By Dr. ALBERT KRECKE. Two volumes. Munich: J. F. Lehmann. 1929. Pp. 1094. M.12.

THESE two volumes are composed of short essays on subjects suggested by the work the author has carried out in his private clinic during the period 1923–26. There is much sound common sense in

his reflections, and it is of interest to read how a practical general surgeon solves the problems coming his way and how his conclusions have been arrived at. Failures are impartially reported with successes. The sections are short and serve to pass an odd hour with profit and entertainment.

ELEMENTS OF HYGIENE AND PUBLIC HEALTH.

Third edition. By J. P. MODI, L.R.C.P. & S., L.F.P.S., Reader of Medical Jurisprudence in the Faculty of Medicine, Lucknow University. London: Butterworth and Co. (India), Ltd. Pp. 645. 10*s*.

THIS is a manual designed for Indian students of public health. It is ambitious in scope and covers the whole field of public health activity, special attention being given to the sanitary problems peculiar to India. In the chapter on ventilation much space is accorded to relatively unimportant details (for example, enumeration of types of inlet), while there is only a brief reference to the work of Leonard Hill (page 93) and no mention of the kata-thermometer. A useful section on the construction of hospitals and schools (page 145) is included, although the size of wards suggested (viz., 40, 32, and 24 beds) does not conform to modern ideals of hospital administration. The chapter on meteorology and climatology contains no reference to ultra-violet rays. Evidence of faulty proof-reading is furnished on page 228, where hydrogen peroxide is described as destroying the water-soluble B-vitamin, thus depriving milk of its *antiscorbutic* properties. In the description of the modes of infection the important method of droplet spread is omitted, and the discredited view that foul air plays a part in the transmission of dysentery and diarrhœa is included. Damp soil is held to predispose to tuberculosis, diphtheria, measles, and other diseases. Noguchi's leptospira is still described as the causative organism in yellow fever, though its association with the disease is not now accepted. The arm-to-arm method of vaccination still appears to enjoy pride of place in India. The hypothesis that putrid meat causes ptomaine poisoning should no longer find a place in a text-book. No reference is made to bacterial agents of food poisoning. The book is marred by a certain crudeness in style and occasional misuse of words.

DISEASES OF THE SCALP.

Pelades et alopècies en aires. By Dr. R. SABOURAUD, Director of the Paris Municipal and St. Louis Hospital Laboratories. Paris: Masson et Cie. 1929. Pp. 378. Fr.80.

THE appearance of this the fifth and last of his series on diseases of the scalp almost coincides with Sabouraud's retirement from hospital routine. The five volumes have occupied his spare time for thirty years, and is not the least of many monuments to his indefatigable diligence and devotion to the scientific progress of dermatology. The subject is arranged in sections which deal consecutively with the microscopic appearances, the bacteriology, the differentiation of analogous conditions of hair loss, heredity and congenital syphilis, causes suspected by patients, associated disorders of the menopause, thyroid dyscrasia, which the author favours as a factor in some cases; and finally, a masterly consideration of the sympathetic and reflex nervous theories first propounded by the author's fellow-countryman, N. Jacquet. The last section is a general summary, and reviews the best of the many treatments that have been advocated. As in the other volumes there are many excellent reproductions of original drawings from microscopic sections and clinical photographs.

There is no cutaneous abnormality so mysterious and dramatic in its manifestations and so frequently discussed as alopecia areata. It has evolved or, rather revolved, in the course of decades through nervous, infective, toxic, reflex, and endocrine-sympathetic phases of conjecture and hypothesis. There is no general agreement to date. A certain "quid ignotum" remains to be discovered—a common factor which will explain the mechanism of production in every case. The subject teems with difficulties, for we are but floundering at the periphery of the endocrine-sympathetic physiology, and are still seeking the instruments of precision which are now available for estimating the functions of most of the other systems and organs of the human body.

The author's modest claim will, we think, be conceded by every reader. "If our conclusions remain dubious, we have at least illuminated the subject to the best of our ability, and we may thereby have facilitated the work of those that shall follow after."

PHARMACOLOGY.

Pharmaceutical Therapeutics, with Pharmacology, Posology, and Toxicology. By ELDIN V. LYNN, Ph.D., Professor of Pharmacology and Chemistry, University of Washington, College of Pharmacy, Seattle. London: McGraw-Hill Publishing Co., Ltd. 1929. Pp. 431. 20*s*.

Prof. Lynn, while not in favour of prescribing by druggists, holds the opinion that the capable pharmacist, in addition to his knowledge of the chemical and physical properties and doses of drugs, must be acquainted with their physiological action and therapeutical uses. This view may be correct, but since it would involve the pharmacist of the future in the strenuous duty of studying anatomy, physiology, pathology, and clinical medicine, he might well prefer to take a medical qualification. The following description of the physiological action of digitalis might well bewilder the reader. "The most prominent result is a powerful persistent stimulation of selected medullary areas, including the vagus, the vomiting center, the heat regulation, the respiration, and the reflexes." The author says in the preface that he has freely consulted numerous treatises on pharmacology, therapeutics, and toxicology. On the whole, he has given a good account of the action and uses of drugs, but it is difficult to see what advantage the book presents to the student of pharmacy over similar works intended primarily for physicians.

Theoretische und Klinische Pharmakologie. Third edition. By H. V. HOESSLIN, Prof. Dr. med., und FRANZ MÜLLER, a.o. Prof. Dr. nat. et med. Leipzig: Georg Thieme. 1929. Pp. 231. M.8.60.

THIS book was published originally in 1921 by Prof. Müller as a companion volume to his text-book for dental students, and while based on the well-known work of Meyer and Gottlieb, was intended to give a succinct account rather than an elaborate discussion of experimental and clinical pharmacology. That it appealed to the German student is indicated by the fact that in 1924 a second edition appeared under the joint authorship of Profs. Hoesslin and Müller, the collaboration of a clinician resulting in a broader discussion of clinical subjects. The general plan is that followed by most modern text-books of pharmacology and therapeutics, though the introductory chapter deals in somewhat greater detail than is usual with the subjects of prescribing, dosage, and the preparations of drugs. There is a short account of general pharmacology, but the bulk of the book deals with special pharmacology, the drugs being classified according to the system on which they exert their main action. By adopting the didactic manner and avoiding discussion, the authors have succeeded in packing more information regarding the action and uses of drugs into its pages than appears in most other works of a similar size. The third edition has brought the book into line with the advances in pharmacology during the past four years, and deals with many of the drugs recently introduced into medical practice. It can be recommended to the busy practitioner as a handy manual of reference, and to the student as a companion to his lectures.

THE LANCET.

LONDON: SATURDAY, DECEMBER 7, 1929.

AMENDMENT OF THE LUNACY ACTS.

THE new Mental Treatment Bill which was read a second time in the House of Lords last week was, as may be seen from our Parliamentary correspondent's report, well received. Lord RUSSELL in his opening remarks stated that the Bill had the approval of the chairman of the recent Royal Commission, and we believe that in so far as it provides increased facilities for the treatment of mental disorders the Bill will commend itself to the medical profession. There are certain details to which exception may be taken, but when these are amended the result of its enactment will be to bring the treatment of mental illness much more in line with the general practice of medicine than it has been in the past. Persons suffering from milder forms of mental disorder will, regardless of their social position, be able to obtain treatment without certification and without suffering from any civil disability. The Bill is a short one of 22 clauses. Clauses 1–5 make provision for the treatment of voluntary boarders. Clause 5 provides for treatment without certification of persons temporarily incapable of volition. Clauses 6–10 deal with the duties of local authorities in these matters. Clauses 11–14 provide for a reorganisation of the Board of Control. Clause 16, in amending Section 330 of the principal Act, raises the important question of the protection of medical men signing certificates.

Everyone is agreed that our public mental hospitals should be able to receive voluntary patients. The scandal will at last be ended that persons applying for treatment in these well-equipped hospitals built at public expense should be refused treatment and virtually told to go away and wait until they are bad enough to get certified as insane. Few will quarrel with the proviso that the name of every voluntary patient admitted to a recognised mental hospital or licensed home must be notified to the central authority. The position is, however, very different when voluntary patients are admitted to general hospitals, nursing homes, or under the care of medical men privately. If a person with mental disturbance voluntarily ask for treatment in a hospital or home why should he more than any other invalid have to be notified to the Board of Control? Who, it may be asked, is going to make a distinction between hysteria and mental disorder or to say that this or that person is sufficiently over the border-line to be notified? It is obvious that those in charge of such patients, let alone the patients themselves and their relatives, will object to compulsory notification, with the result that there will be considerable evasion of the law. It should be remembered that Section 315 of the principal Act is not repealed and that anyone who receives persons of unsound mind for profit will be liable to prosecution; indeed if this Bill passes the section may well be much more strictly enforced. Doubtful cases there will always be, and those in charge of them, perplexed and worried at the possibility of prosecution, will prefer to inform the Board of the presence of such patients. If, instead of requiring that all persons with mental disorder who present themselves voluntarily for treatment should be notified, the Bill left this to the discretion of those in charge, the possibility is that all doubtful cases would be reported. This should in itself be a sufficient safeguard. If there were no concealment the evil of illegal detention would be to a very large extent prevented. Whilst it must not be concluded that mere notification would necessarily be a bar to prosecution under Section 315, it is not likely that the Board would initiate proceedings when they had had opportunity of ascertaining all the facts. We trust that obligation to notify all voluntary mental patients will be withdrawn and discretion left to the medical man responsible for the treatment of the patient. We also concur with Lord DAWSON in wishing to drop the word "boarder" altogether. It is most undesirable to draw a distinction between boarder and patient; all are patients and the term "voluntary patient" is sufficiently explicit.

The clauses of the Bill providing temporary treatment for persons unable to exercise volition without certification will prove a great boon to many. The acute puerperal case, many post-febrile confusional cases, a large proportion of alcoholic and toxic insanity will be treated to recovery without formal certification. The procedure recognises recommendations by two medical practitioners, one of whom must either be the usual medical attendant of the patient or a practitioner appointed for the purpose, either by the Board or by the local authority. This creation of a specialist class, although in some respects open to exception, may prove desirable on the balance; it will make the position of practitioners generally much easier if in difficult cases they can call to their assistance someone whose knowledge and experience have official recognition. It is most satisfactory that the Minister of Health has had the courage to depart from the recommendations of the Royal Commission in dispensing with the application to a judicial authority in respect of these cases. How patent it is to everyone with clinical experience that the recommendations—reluctantly proposed by the Commission—requiring an application to a justice of the peace before securing temporary treatment, would defeat the end in view. These patients are not being detained against their will, they are confused and indifferent, and their relatives would certainly not apply to a magistrate unless compelled to do so; serious delay would result and the procedure would resemble so closely that adopted for the certification as of unsound mind that the provision would be hardly worth while. In the House of Lords debate Lord BRENTFORD seemed to suggest that a judicial inquiry was desirable, and the Lunacy Reform Association will press for it. We are of the opinion that the intervention of a magistrate is neither a protection to the patient nor to the medical man who signs recommendations or certificates; it generally means delay, and the protection afforded is illusory. Neither the Royal Commission (nor, we believe, the Departmental Committee which preceded it) was able to find a single case of any person improperly detained; it is surely clear that the public has no cause for disquietude.

The proposed reorganisation of the Board of Control does not greatly affect medical men generally, but

Clause 16 which is designed to give greater protection to medical men signing recommendations and certificates is of great importance. Practitioners are now so unwilling to sign certificates that there is often serious difficulty in securing treatment for insane persons. The actual effect of the new clause is difficult to forecast; we must confess that we do not see a great deal of difference between it and the sections of the previous Acts which it replaces. It is perhaps more emphatic, but it does not appear expressly to say that on the person who wishes to bring an action lies the onus of proving that the medical man "has acted in bad faith or without reasonable care." We have never asked for the recommendations or certificates of medical men to be entirely privileged—privilege would necessitate a judicial inquiry under conditions inimical to the treatment of mental illness; it is clear, nevertheless, that they should not be exposed to the expense and annoyance of proving their good faith and care in the discharge of an unwelcome public duty. The present law does not effectively prevent this, and the new clause must be so drafted as to carry out the manifest intention of the legislature. It is a fact, we believe, that generally in proceedings involving an allegation of negligence—for instance in a case arising out of a collision between two motorists—a much more emphatic proof of carelessness is insisted upon in charges of criminal negligence than in civil actions for damages. It might be possible to insert in the Bill a proviso that no certifying practitioner be held liable in damages except upon clear proof of such degree of negligence as would justify conviction upon a criminal charge.

OPERATION FOR DETACHMENT OF THE RETINA.

THERE are few ophthalmic surgeons who cannot count on the fingers of one hand the cases of "cure" of detached retina within their own personal experience. Yet there are two facts that prevent us from giving up every case that we see as entirely hopeless. One is that there is not the slightest doubt that sometimes, after a shorter or longer interval and with or without treatment, a reattachment does take place, it may be with some restoration of function, and that in many cases where this does not occur extension of the detachment is arrested, and a certain amount of useful vision retained even for a considerable period. The second fact is that when a detachment occurs the detached portion does not at once necessarily lose its function and become dead like the superficial layer of skin over a blister. The detached layer is not in fact the complete retina, but only the part corresponding to the anterior part of the primary optic vesicle. After invagination has taken place there is always a potential space between the anterior and the posterior layer, the latter developing into the pigmented epithelium and always remaining attached to the choroid by which it is nourished. True, the rods and cones which go with the anterior layer are also normally nourished by the choroidal vessels, but when a detachment occurs they seem to be able to derive sufficient nourishment to maintain life for a time, either by lymph from the retinal capillaries whose branches penetrate from within as far as the external molecular layer (but not as far as the nuclei of the rods and cones) or from the choroidal vessels through the intervening layer of fluid. Exactly how this happens has never been adequately investigated, but there is no doubt that it does happen. As H. L. EASON puts it, "For some long period after a detachment the nutrition of the retina remains quite unimpaired and vision is recovered immediately contact with the pigment layer is restored." At any rate this occurs in some cases. Illustrations of these two facts will be found in the discussion which took place in the Ophthalmological Society at its congress of 1915 and the findings of the committee appointed to report on the subject.[1] The latter deals with 85 cases of "cure" in the sense that the retina had gone back into position and stayed there for six months. Now since according to all our past experience the complete reattachment or permanent cure of a detached retina must be considered as exceptional, it is important to classify the cases according to their different causes with a view of determining whether some are more hopeful than others.

Roughly and according to different estimates, from one to two-thirds of the cases are associated with myopia, but it is remarkable that cases of high myopia, higher than 10 or 12 dioptres, are not more liable to detachment than cases of moderate myopia below 10 dioptres. The first classification therefore may be made between myopic and non-myopic cases. The latter may be classified into (1) those associated with a new growth; (2) albuminuric cases which may be subdivided into those associated with pregnancy and those not so associated; (3) those associated with cyclitis or choroiditis; (4) traumatic cases; (5) those in which no definite association can be discovered. Of these the two classes in which the prognosis is not so bad as the average are first the cases of albuminuric retinitis of pregnancy and secondly simple traumatic cases due to an effusion of blood or lymph into the inter-retinal space. Cases of detachment may be classified in what is perhaps a more fundamental way into those which depend on a push from behind and those which depend on a pull from in front. Some authorities in the past have attributed all or almost all detachments to exudation from the choroidal vessels into the inter-retinal space and an osmotic action between that and the vitreous chamber (Rachlmann's diffusion theory). Others have attributed all or nearly all cases to the formation of bands in the vitreous attached to the inner surface of the retina pulling on it and in some cases causing holes in it (Leber-Nordenson theory). Since in some cases the first of these two theories has been proved to be correct and in other cases the second, the truth would appear to lie not between the two theories but to embrace them both, with the proviso that neither must be regarded as applying to all cases. Another classification which by some is regarded as of fundamental importance is into those cases in which there is a hole or holes in the retina and those in which there is none. If there is a hole connecting the inter-retinal space with the vitreous chamber and the vitreous is fluid (as it generally is in these cases) it is obvious that any treatment by rest or by puncture which may result in a temporary emptying of the inter-retinal space and reapp cation of the retina proper to its pigmentary layer can be of no permanent benefit. Sir WILLIAM LISTER has demonstrated this point with great clearness.[2] On the other hand, it is supposed by some that nearly all cases of detachment are associated with a hole which, however, is often so far forward in the region of the equator that it may be very difficult to detect with the ophthalmoscope.

As to treatment, we must first of all exclude those

[1] Trans. Oph. Soc., 1915, p. 69; 1916, p. 352.
[2] Brit. Jour. Oph., January, 1924, p. 1.

cases in which the detachment is merely a symptom of an underlying tumour, cases in which no treatment but excision is indicated, as well as cases of complete funnel-shaped detachment in which any treatment is obviously futile. Setting these aside the different methods which have been adopted in the endeavour to find a cure for the condition may be divided into non-operative and operative. The former include rest in bed for some weeks with or without such measures as pilocarpine injections to secure free diaphoresis. Of the latter simple evacuation of the fluid by scleral puncture is the simplest, but the use of the cautery to secure inflammatory adhesion at the site of the puncture is also widely practised. Multiple incisions into the vitreous chamber division of the vitreous bands and in certain cases injection of sterilised calf's vitreous into the chamber are the principles of Deutschmann's operations (1895) by which he claimed a large proportion of successes—lacking endorsement, it is true, from any other operator. Iodine, which was at one time injected subconjunctively, has been revived in the form of subcutaneous injection designed to promote absorption of the effused fluid (RICHARD KERRY of Montreal[3]). The subconjunctival injection of a solution of salt or other fluids calculated to produce counter-irritation is a procedure that can do no harm and is frequently practised. At the recent International Congress at Amsterdam Dr. J. GONIN, of Lausanne, showed paintings of patients treated by a new method designed to close up the hole in the detachment by means of the thermocautery, the results being said to be remarkable. In the report of the Ophthalmological Society of 1916 already referred to, 44 of the 85 cases of cure followed some form of operation, usually scleral puncture, in 41 no operation was done, and in 24 the reposition of the retina took place spontaneously in the absence of any treatment or after treatment had been tried and proved unsuccessful. It is noteworthy that in none of the successful operation cases is there any note of the presence of retinal holes, but in three cases of spontaneous cure holes were noted. With regard to all operative procedures except, perhaps, simple puncture, we have to take into account the fact emphasised by ERNEST THOMSON[4] that in a certain proportion of cases they have actually done harm, as well as the fact that statistical evidence shows that up till 1910 the proportion of cures claimed for non-operative treatment was nearly as great as that for operative. Writing in 1910, THOMSON found that taking the average of the claims of cures by various operative methods he could not put it at higher than 10 per cent., whereas the claims of other writers who adopted solely non-operative methods averaged a proportion of cures of 7 per cent.

Since these percentages are derived from more or less selected cases which different writers have chosen to illustrate the results of the various lines of treatment advocated by them, it is safe to surmise that the actual percentage of cure in all cases is very much lower, and seeing that, so far as is known, the prognosis of operative treatment has not materially improved since THOMSON'S estimate was made in 1910 the particular line of treatment chosen must be left to individual judgment. At the present time the balance of benefit can hardly be said to be decidedly in favour of operative treatment. The most hopeful line of advance in the future would seem to be an increasing knowledge of the pathology of detachment and especially as to the causation and significance of holes.

[3] Brit. Jour. Oph., May, 1928, p. 246.
[4] Ophthalmoscope, 1910, p. 430.

SOME EFFECTS OF MUSCULAR EXERCISE.

THE physical consequences of heavy exertion have not been worked out at all fully, but modern methods of investigation are steadily supplying us with facts on this subject which are of practical importance in clinical medicine. It has long been known, for instance, that muscular exercise increases the pulse-rate and is followed by a fall in the blood pressure, and radiology now enables us to say that it decreases the size of the heart. While most observers agree about this decrease, they are by no means unanimous when saying at what point it begins. Probably, however, it is present during the muscular effort itself; this is at any rate the view of F. DEUTSCH,[5] who studied Olympic athletes in 1928, and in some 90 per cent. of them found a diminution in the diameter of the heart immediately after maximal physical exertion. The decrease of volume may last a considerable time; after prolonged effort, such as the marathon race, it may persist for 24 hours. The degree of exertion, says DEUTSCH, is reflected not so much in the extent of the decrease as in the time it lasts. Thus the sprinter and the marathon runner show similar diminution in cardiac volume, but the former gets over it relatively quickly. P. P. GOTTHARDT,[6] in a report of nearly 1000 radiographic examinations of the hearts of athletes, agrees in finding no relationship between the reduction in the size of the heart and the kind of exercise undertaken. While it is difficult to say what is a large heart or a small one for a given individual, he came to the conclusion that the relatively large hearts lessened in volume more than the relatively small ones. In his long series he found no form of athletics in which an abnormally large heart was the rule. On the contrary, the bulk of his subjects showed heart widths smaller than the average for people who had not undertaken heavy athletics. The only possible exception to this rule were the swimmers, and it was noted that boxers, runners, and oarsmen had especially small hearts. After months or even years of strenuous athletics no cardiac enlargement could be detected beyond what might be expected from natural growth. The average diminution in transverse diameter after exercise appears to be about 1 cm., and it is not very easy to account for it. Since it follows mild as well as severe exertion, it cannot be due to exhaustion; nor is it wholly dependent on changes in pulse-rate or blood pressure. Rather it must be an expression of alteration in the peripheral circulation brought about, DEUTSCH suggests, by oxidative conditions in the tissues themselves—e.g., accumulation of CO_2 or lactic acid, or altered viscosity of the blood—which affect the venous filling of the heart. If, as is likely, the decrease is present during exertion, it cannot be looked on as a state of recovery, but must be recognised as an accommodative response of the healthy cardiac muscle. Possibly a shortening of muscle follows a brief initial stretching which results from increased diastolic filling. In a diseased organ this shortening may fail to take place, and hence permanent dilatation may follow. According to this view, lasting enlargement from extreme exertion would be evidence that the muscle was previously damaged.

Another organ whose reaction to exercise has lately been investigated is the spleen. Prof. JOSEPH BARCROFT, having formerly shown that muscular effort causes remarkable variation in its dimensions, now (with H. FLOREY[7]) brings forward evidence that in the dog a contraction of the spleen persists when

[5] Med. Klin., 1929, xxv., 628.
[6] Münch. med. Woch., 1929, lxxvi., 1117.
[7] Jour. Physiol., Oct. 23rd, p. 181.

exertion is over. In one case, for example, after moderately severe exercise, it contracted to almost half its resting size and remained in this condition for the 20 minutes during which the animal was under observation. This reduction in the volume of the spleen may be looked on as part of a reserve mechanism whereby the active muscles receive as much blood as possible for their all-important work. BARCROFT quotes M. S. PEMBREY and others as having demonstrated a corresponding constriction of the renal vessels during severe exercise. The existence of such a reaction is of no little practical importance, and it must clearly be taken into account in conditions like the so-called orthostatic albuminuria. It has long been realised, of course, that traces of albumin are commonly to be found in the urine in normal subjects after strenuous muscular exercise. Recent information about this is provided by O. HUG[8] who, in a study of the Swiss marathon runners in 1928, found a greater or lesser degree of albuminuria in every one of them after the race, whereas beforehand none had shown any abnormality in the urine. The quantities of albumin varied between 0·2 and 0·8 parts per 1000, the average being just under 0·4 per 1000, and these are striking figures which may well cause surprise. Even more remarkable, however, were the results of the microscopic examination of the urine. In every case in which sufficient urine could be obtained immediately after the race large numbers of hyaline and granular casts were found, together with a few red blood cells. In almost all the subjects the benzidin test on the urine was positive—an observation which is suggestive, despite the well-known drawbacks to this test when applied to the urine. Two of the runners were still passing casts and red blood cells in the urine when re-examined 8 and 14 days after the race. Such findings point unmistakably to some definite damage to the structure of the kidney as a result of the exertion, but their like has seldom been recorded by other investigators. HUG suggests that an important factor in the 1928 race was the extreme heat of the day, whereby the competitors were overheated and their urinary secretion was excessively reduced. Possibly their renal damage may be largely attributable to the very high acidity of the urine under such circumstances in combination with the vaso-constriction described by PEMBREY. Such inquiries might well be pursued further—perhaps with particular reference to functional albuminuria and related problems.

Such questions as these are closely bound up with the interesting phenomenon of the second wind. This is so definite, and happens so quickly, that it has been put down to the activation of a reserve mechanism—possibly a change of blood pressure, of sweat production, or of coronary circulation. K. F. WENCKEBACH has drawn a striking analogy between the "dead point" (Totenpunkt) occurring just before the onset of second wind, and an attack of angina pectoris—a comparison which his novel theory of this condition supports. It may be, as GOTTHARDT suggests, that an initial stretching of the heart at the onset of violent exercise is followed at the moment of second wind by the secondary contraction to which we have referred. Stretching and distension of hollow viscera is certainly a more frequent cause of pain than is contraction, and the same may perhaps be true of the blood vessels themselves. As WENCKEBACH has pointed out, pain is absent during the vaso-constriction brought on, for example, by cold, but comes on with extraordinary intensity—as all will remember—during the succeeding period of vaso-dilatation.

[8] Schweiz. med. Woch., 1929, lix., 522.

Annotations.

"No quid nimis."

ST. BARTHOLOMEW'S HOSPITAL APPEALS.

ON Wednesday last, by setting in motion a revolving beacon, the Prince of Wales, the President, inaugurated an appeal for a million sterling for the reconstruction, enlargement, and re-equipment of St. Bartholomew's Hospital. The appeal was made at a gathering in the Great Hall, and it was fittingly made not merely to London or these islands but to the Empire at large. St. Bartholomew's, founded more than 800 years ago, is the mother-hospital of the British realm, and its claim is as undeniable as its needs. The appeal comes appropriately from the heir to the throne, for St. Bartholomew's has always been the especial care of the Crown, and it holds from his ancestors a dozen charters at least.

A round million is a formidable sum of money, but a little consideration shows that the estimate is not extravagant. It is plain that a building largely 200 years old cannot meet the necessities of so elaborate a mechanism as a modern hospital, and it will no doubt surprise many people to learn that the small maternity ward at St. Bartholomew's is housed in an attic, with dormer windows. Anything more unsuitable cannot be imagined, unless it be the necessity, only now obviated, of wheeling patients to and from the operating theatres across an open quadrangle. Many of these disadvantages to patients, medical staff, and nurses are still being endured. Some of them are in course of removal, but they cannot be completely obviated until the success of the appeal enables the Governors to replace archaic conditions by modern ones making for smooth and easy working, the comfort of patients, and the convenience of those who tend them. A good beginning has already been made. The rapid progress of surgery puts heavy demands upon all hospitals, and St. Bartholomew's has found it necessary to build a new surgical block of 250 beds, with five attendant operation theatres, and to enlarge Queen Mary's Nurses Home to accommodate 50 more nurses. All this work is in progress and nearing completion. It will cost £231,000, of which £133,000 has yet to be provided. A great new out-patients' block, its central hall seating 850 people, with all the necessary appurtenances, has already been built. What has been done and is being done is, however, only an instalment—much more "remains behind." The south, west, and east quadrangle blocks have to be replanned and grouped departmentally, the eighteenth-century fronts being retained. Attic floors will be removed and replaced by new ones, and the south quadrangle block will be given a flat roof for air and sun treatment. Children in-patients, who are at present in adult wards, will be placed in a separate department, the maternity and gynæcological unit will be transferred to the present casualty block, and the new out-patients' block will be completed by the erection of orthopædic, massage, and children's out-patients departments on the site of the obsolete anatomical lecture theatre, chemistry and biology schools of the medical college. That college is to be enlarged by new buildings adjoining the Harvey laboratories, which will provide lecture theatres for medicine and surgery, and laboratories with full provision for research for anatomy, biology, and chemistry, departments at present crowded into inconvenient and obsolete quarters. When money is available it is hoped to supply one of the most urgent requirements of the hospital by building a students' residential college in St. Bartholomew's Close, a part of Rahere's original foundation.

But hospitals do not live by buildings and equipment alone; in teaching and research they play a part which is ever growing. There is no need to insist upon the position long held by "Bart.'s" in this field, but only to say that in research its fame has been won in

face of the most serious handicaps. "Endowment of research" is unknown in Smithfield. There is no endowment for any one of the six professorial chairs in the medical college, and there is urgent need for new chairs and readerships in obstetrics, biochemistry, clinical pathology, and bacteriology. It is the ultimate aim of the hospital to establish an institute for research, and to such purposes will be devoted any money which is not absorbed by things more tangible but not more immediate. Meanwhile, the ordinary expenditure of St. Bartholomew's Hospital exceeds its ordinary income by between forty and fifty pounds a day. Here, then, are abundant opportunities for help, not only in the alleviation and cure of disease but in its prevention. To the man in the street the daily work of a great hospital naturally makes the first appeal, but he is beginning to learn that this work is made possible and effective only by labour behind the scenes. The appeal now being made is indirectly for something larger and more momentous even than the modernisation of the world's most historic hospital.

PASTEURISATION AS A MAKESHIFT.

AT a discussion last week in the Comparative Section of the Royal Society of Medicine on improvement in the public milk-supply, Mr. H. W. Steele-Bodger, M.R.C.V.S., contended in a closely reasoned argument that pasteurisation was making milk dangerous instead of safe for consumption. It had been proved, he said, that coliform organisms persisted in pasteurised milk; of 189 samples of pasteurised milk delivered in 15 areas 40 per cent. had been found to exceed the bacterial content allowed by the Ministry of Health, 20 per cent. exceeded it by a large margin. Moreover, the tubercle bacillus was able to survive pasteurisation, though admittedly it was weakened. His own belief was that if the injected guinea-pig were suffered to live for three months instead of six weeks, there would be a much larger proportion of tubercle-positives. The natural bactericidal power of milk appeared to be destroyed at a temperature of 65° C. and efficient sterilisation removed from milk the antiscorbutic vitamin. Pasteurisation carried with it the temptation to submit to the process very dirty milk in the hope that it would thereby be rendered clean; it tackled the problem from the wrong end, glossing over slovenliness in production and supply, and doing nothing to mitigate the grave economic loss caused by the spread of tuberculosis among cattle. If a tithe of the money, thought, and labour spent in treating the ills caused by dirty and diseased milk were spent in preventing these ills and ensuring a quick and clean service of whole milk, the problem would soon be solved. Local authorities were now paying increased attention to the inspection and control of dairies, and Sir George Newman had recently declared that the milk supplied to-day was a different product bacteriologically from that of a few years ago. In 1922 no more than 5 per cent. of producers were supplying milk with less than 10,000 organisms per c.cm., whereas in 1928 nearly 60 per cent. had reached that standard. In the Midlands, especially in Staffordshire, lists were kept of farmers producing good milk, prizes were awarded, and it was a matter of rivalry to occupy a high place on these lists. At contract time farmers who showed lack of enterprise in the production of pure milk lost their jobs, though unfortunately they seemed able to dispose of their inferior milk readily enough in London and elsewhere. If the consumer was determined to get clean raw tubercle-free milk he would get it, but he must realise that for the better article a better price must be paid. He advocated an intensive campaign of public education, for it was not fair that producers should expend large sums on improving their milk if the public did not appreciate what was being done. Lieut.-Colonel E. C. G. Maddock, who followed him, insisted that the actual workers in milk production were keen to do all that was required of them; the type of farm labourer concerned was gradually undergoing a real change for the better. But the grading of milk was most unsatisfactory, as purchasers thought that Grade A was the best milk. If it was agreed to call Grade A the milk of tubercle-free herds which was bottled on the farm the public would then know that buying this grade ensured that the milk was free from the tubercle bacillus. Mr. P. B. Tustin, while agreeing with Mr. Steele-Bodger that no effort should be spared to get milk fresh and in the whole condition, doubted whether the bacterial count gave a clear indication of the condition of the milk. While in Canada, he said, he had a specimen of bottled milk divided into six portions, each of which was sent to a leading bacteriological laboratory with the request that it should be plated at once, notice having been sent beforehand. If his hearers had seen the differences in the reports on the same milk he thought their faith in the accuracy of the test would be shaken. He cited the instance of a cow which had been brought in with a broken leg. After it was rendered unconscious and suspended, pus ran out of the nostrils, and when the carcass was opened up it was found to be riddled with tubercle. Yet that cow bore a tag issued by a qualified veterinarian to the effect that the cow was free from tuberculosis. Experience such as that had caused him to resolve that he would have all the milk for his own use pasteurised while doing everything possible to control production. In Winnipeg, where the quality of milk at one time was very bad, he had seen to it that every supplier of milk had a concrete floor in his stable, with a separate milk house and washroom. Energy was concentrated on the individual workers, and as their standard was raised the milk-supply improved steadily. But milk had to be produced and shipped in large quantities, we were not living in a Utopia, and for the present pasteurisation could not be done without.

OBSCURE FEVERS OF THE TROPICS.

A GREAT deal of work has yet to be done in classifying the short febrile diseases of the Near and Far East. In such a task it is clear that the Royal Army Medical Corps and the Indian Medical Service have exceptional opportunities. An unrivalled clinical field, the necessity for keeping accurate records, and the laboratory facilities now available, have resulted in some definite advances in our knowledge of these tropical fevers of short duration. Such fevers, as we pointed out in a recent annotation (THE LANCET, Sept. 28th, p. 676), may be atypical or abortive attacks of known diseases or due to some agent hitherto unrecognised. In a Report on Short Fevers at Kamptee, Central Province, India,[1] which was compiled with the help of funds from the Director of Medical Services for India, Major R. N. Phease lately described the modern methods of investigating a seasonal outbreak of epidemic fever of unknown origin. As the result of careful inquiry into every possible factor, he showed that what had appeared to be a local fever with special peculiarities was really a mixture of sand-fly and dengue fever. Incidentally, he entirely failed to demonstrate the virus of either disease, and concluded that it is ultramicroscopic—a conclusion in consonance with those of Knowles and Das Gupta in Calcutta, and Young, Richmond, and Brendish at Landikotal. As was briefly reported in our columns at the time, MacArthur, Dudley, and Whittingham,[2] at the International Congress of Military Medicine, read a paper in which they show that there is a clear distinction in the blood picture between phlebotomus or sand-fly fever and dengue on the one hand, and leptospiral infections, such as Weil's disease, on the other. They claim that in an acute fever, provided that the presence of malarial parasites and the spirochæte of relapsing fever has been excluded, a leucopenia with

[1] Jour. of Roy. Army Med. Corps, June, 1929.
[2] Ibid., October, 1929.

a relative increase of large lymphocytes points to phlebotomus fever or dengue, while a leucocytosis accompanied by an absolute and relative increase of polymorphonuclears suggests the Weil's disease group. This leucopenia lasts for the first three to five days, and is followed by a transient leucocytosis. The lowest point of the leucopenia occurs six to nine hours after the onset of the pyrexia, and is a useful aid to early diagnosis. A useful suggestion for further research into these short, unclassified fevers is made by S. Smith,[3] who considers that a group with some such label as S.P.A. ("short pyrexial attack") should be created for medical record purposes, and sent up for special investigation by the A.D.M.S. At present the only "unclassified" complaint which it is permissible to have in the Army is the well-known "P.U.O.," and if a diagnosis of P.U.O. is made, it entails segregation and the whole paraphernalia of investigation as a suspected enteric. Short fevers of other origins, which cannot be classified, have therefore to be labelled after their most prominent symptoms—e.g., constipation, headache, &c.—and thus the records do not show the real nature of the illness.

SHOULD THE GUARDIANS BE TOLD?

SUPPOSE that the members of a board of guardians become aware that the admissions to a hospital under their control include large numbers of cases of "incomplete abortion." Suppose that they invite their medical superintendent to suggest some means for putting a stop to such a state of affairs. Suppose that they even press him to say what steps he is taking to bring the offenders to justice. What is the medical superintendent to do?

The answer depends, as usual, upon the point of view. The point of view of the guardians may not be fixed or certain. Some may be indifferent to the situation; others may regard it as a scandal to be hushed up; others again may demand the utmost publicity. Of these last some may even expect the medical superintendent to cross-examine the patient with all the rigours of the third degree while police-women disguised as nurses make notes of her answers. The point of view of the patient is easier to guess. She may not be vividly conscious of criminal guilt but she will not be anxious for advertisement. She has come to the hospital for treatment, not for persecution; her mental and physical well-being will hardly be improved if she is led to look on the hospital ward as a mere corridor to the assize-court. The medical superintendent himself will probably maintain the point of view of his profession. It is his task, he knows, to save life and to restore health, and for this purpose to win confidence. He will have been trained to remember that it is no part of his duty to act as detective or magistrate, though it is equally not his business to shield a professional abortionist. His dilemma is a difficulty which meets the practitioner in private practice, though hospital experience (for instance when a number of cases are admitted from a particular district) may intensify it. It is the ancient embarrassment of reconciling his duty to the patient with his duty to the public. He will instinctively think of the former while the law will instinctively dwell upon the latter. The point of view of the law will be that the doctor, like any other good citizen, must do his utmost to aid the prevention and detection of crime. Judges have hinted that the doctor should urge the patient to make a written statement, especially if she is likely to die. The law is reluctant to lose a valuable piece of evidence in the always difficult task of bringing an abortionist to justice. In the slightly informal atmosphere of a charge to the grand jury, Mr. Justice Avory once spoke of the moral duty of the medical man to communicate with the police even where the patient was in no danger of death. All criminal trials have their own special facts and that was a case where a woman who had died after an illegal operation had confided to a doctor the name of the abortionist. There is no exact statement of the medical practitioner's duty either in the statute book or in any considered utterance of the Court of Criminal Appeal. No doctor has ever been prosecuted for aiding and abetting criminal abortion by neglecting to cross-examine his patients and to communicate the results to the police. If a doctor thinks fit, and has the opportunity, to urge a patient to make a statement for police purposes, the law will be satisfied and professional confidence will not be infringed. If he does not, the law has no obvious means of punishing him. If he makes the effort and fails, he need do no more. If the patient confides to him the name of the abortionist, it by no means follows that she authorises him to pass the statement on, though she may perhaps be the more readily persuaded to give that authority. If she makes no statement at all, the doctor is not compelled to convey mere suspicions to the police. The policeman's primary duty is to catch the criminal; the doctor's primary duty is to attend to his patient.

The position of the medical superintendent facing guardians who conceive that there is some easy short cut through these difficulties is not entirely imaginary. One such officer, hard driven by the members of his board, protested with dignity against the unfairness of expecting him to deal publicly with these matters and was finally driven to say that, unless he had some guarantee against such insistent pressure, he must decline to attend the meeting of the board. The wisdom and firmness of his attitude will be applauded.

[3] Jour. of Roy. Army Med. Corps, June, 1929.

MEDICAL PRACTICE BY FOREIGNERS IN GREAT BRITAIN AND IRELAND.

THE proposed International Convention on the Treatment of Foreigners has led the Privy Council to inquire of the General Medical Council what conditions are imposed on foreigners who wish to practise medicine or dentistry in Great Britain or Ireland. A memorandum by the Registrar states in reply that neither the General Medical Council nor the Dental Board has ever been concerned with the nationality of persons applying for registration in the Medical or Dentists Registers. If a practitioner applies who possesses a qualification entitling him to registration, the Council would register him. It may be that the applicant does not desire to come to this country but seeks registration in order that he may be able to obtain registration in British Dominions and Possessions in which registration, or eligibility for registration, in Great Britain and Ireland is an essential requirement. If the applicant desires to reside and practise in this country, it is assumed that the prescribed requirements in regard to the residence of aliens in this country have been complied with, and the Council makes no inquiries in regard to this. The fact that an applicant for registration possessed a recognised diploma would not, so far as the Council and Dental Board are concerned, be held to override any regulations which might be in force relating to the admission of aliens to this country. With regard to changes of name in the Medical and Dentists Registers, however, in the case of persons who are not British subjects applications are not acceded to unless a deed poll is supplied which has been enrolled in the Supreme Court. If this is done it is assumed that the change has official sanction and the application is usually acceded to. The memorandum goes on to point out that unregistered persons are not prohibited from practising medicine in this country though they are under certain disabilities; they cannot, for instance, hold any public medical appointment, they cannot give any valid certificate required under any Act of Parliament, and they cannot obtain dangerous drugs, or assume any title implying registration as legally qualified practitioners. Apart from this they have entire freedom of practice. Moreover, persons who are not British subjects and who have obtained from a foreign university a degree of doctor in medicine, and are

entitled to practise in their own country, may act as resident physician or medical officer of any hospital established exclusively for the relief of foreigners in sickness, provided they are not engaged in medical practice except in this way. This is the position in regard to medicine. Unregistered persons, on the other hand, are entirely prohibited from practising dentistry in this country.

CARBON MONOXIDE POISONING.

A NUMBER of readers must have been shocked when they saw the account of a recent inquest on two men who had died in the back of a saloon motor-car which was stuck in a water-splash. It was obvious to anyone familiar with carbon monoxide poisoning that the men had met their death from inhaling exhaust fumes, yet the coroner's jury brought in a verdict of death from misadventure—exposure to the elements. Two doctors attended the post-mortem examination and one of them—who was not well received by the coroner—very properly pointed out the peculiar pinkness of the blood which is so characteristic in victims of monoxide poisoning. The opinion of the other doctor, however, prevailed and the coroner and the jury were satisfied that two ordinary healthy men who had drunk no more than a pint or two of beer could meet their death seated in a closed saloon, with windows shut, through sitting for about a quarter of an hour with their feet wet. This verdict involved for the unfortunate driver of the car a committal for being drunk in charge of a motor vehicle. Owing apparently to the fact that the windows beside him were open he escaped with his life, after a period of severe poisoning which the police, not unnaturally perhaps, interpreted as alcoholic intoxication. Happily Prof. J. S. Haldane and Dr. Leonard Hill were among the readers of the report of the inquest and immediately realised that a serious miscarriage of justice was likely to arise. They offered themselves as witnesses for the defence and the case against the driver was dismissed.

It is obvious that the signs and dangers of carbon monoxide poisoning are by no means fully appreciated even by the medical profession and still less by the public. There was considerable discussion at another recent inquest (the *Times*, Nov. 28th) about the cause of the death of two people found in a bathroom in Carshalton. The strong evidence of Dr. Roche Lynch, however, was able in this case to convince the court that carbon monoxide must have been the cause. Dr. Hill wrote to the *Times* on the following day drawing attention once more to the risks of running an engine in a closed garage and in tunnels. The events in the case of the saloon trapped in the splash were very similar to those which occur when an engine is run in a garage. The outlet of the exhaust was under water; the driver raced his engine in the effort to drive the car out, and either a leak in the exhaust and silencer let carbon monoxide through into the body of the vehicle or the gas bubbled vertically up from the end of the pipe. The fact that the men had taken beer intensified the action of the gas in producing anoxæmia, but the fumes may well have contained 15 per cent. of monoxide, a concentration which would poison the sober and vigorous. The most recent work on carbon monoxide poisoning appears in the form of two papers by Dr. J. Argyll Campbell[1] from the National Institute for Medical Research, Hampstead. He stresses the striking resemblance between the physiological and pathological effects of carbon monoxide poisoning, of exposure to low oxygen pressure in the air, of hæmolysis, and of hæmorrhage. This supports Haldane's original view that carbon monoxide is not in itself a tissue poison, but acts simply by interfering with the oxygen supply to the tissues. The cause of death is heart failure, and the power to tolerate an atmosphere containing a good deal of the gas depends upon the ability of the vital organs to function under a low tissue oxygen tension. The classical account of the symptoms of oxygen want has been supplied by Prof. Haldane, who describes nausea, vomiting, rapid breathing, periodic respiration, headache, visual disturbance, irrational states, and finally coma and cardiac failure. It is easy to see that such symptoms in a man smelling of alcohol would very naturally be diagnosed as drunkenness by the police. The irrational states would add support to their view; those who have read Prof. Haldane's story will remember how he had to be dragged out of his exhaust chamber on the point of collapse, but still protesting vigorously that he was perfectly well.

Another serious question arises when the effects of chronic oxygen starvation are considered. Dr. Campbell's researches have been particularly directed towards chronic poisoning by carbon monoxide, and it is known that people who are continually starved of oxygen may suffer severe and even permanent damage to their circulatory, urinary, and nervous systems without being aware that anything is happening to them. Workers in garages and confined spaces where internal combustion engines are constantly running may be exposed to this risk. More research is needed to give us a definite statement about the chronic form of poisoning, but it cannot be too strongly emphasised or too widely known that death from acute carbon monoxide poisoning may occur in bathrooms where the geyser has no vent pipe, in sheds where an engine is running without free access to the air, or even in a closed car on the road if there is any leak in the exhaust pipe under the body; that one part in a thousand parts of air is a deadly mixture, that the poison is insidious and gives no warning whatever, and that the symptoms of partial poisoning strongly resemble those of alcohol. As Dr. Hill suggests in the *Times*, these facts should be taught to all first-aid classes and they should most certainly be familiar to every doctor.

[1] Brit. Jour. Exper. Path., October, 1929, p. 304; Jour. Physiol., 1929, lxviii., 81.

DRAINAGE AFTER CHOLECYSTECTOMY.

AFTER the operation of cholecystectomy, the absence of any inflammatory reaction, a dry field, and the fact that the cystic duct has been ligatured securely, tempt the surgeon to close the abdominal wound completely. The disadvantages of drainage are a possible slight increase in the duration of convalescence, the risk, though admittedly a slight one, of a ventral hernia, and the production of an unsightly scar from puckering at the site of drainage. Against these rather trivial considerations have to be set off the risks of a collection of blood in the region of Morrison's pouch, most real in those cases where operation has been carried out in the presence of acute inflammation, and the grave tendency of such collections to become infected. Moreover, quite apart from hæmorrhage, a considerable quantity of bile may drain from the wound; this may be due to inadequate ligature of the cystic duct, but is in many cases, as E. R. Flint has shown, undoubtedly due to the section of accessory hepatic ducts, which are often insignificant and difficult to find or secure, even if their presence is suspected. John A. Wolfer[1] has recently published an interesting experimental study of his results, following cholecystectomy in the dog. His work shows clearly how healing of the ligatured stump of the cystic duct is encouraged by the formation round it of organising exudate. The actual site of ligature separates by aseptic necrosis without any obliterate process taking place within the lumen, and therefore, in the absence of organising exudate around the site of ligature, leakage is inevitable. In the dog, at any rate, drainage seems to interfere with the formation of fibrin round the stump, and leakage is more prone to occur where drainage is provided. Wolfer stresses the inadvisability of

[1] Surg., Gyn., and Obstet., October, 1929, p. 462.

extensive stripping of the cystic duct, proximal to the site of ligature, since deprivation of its blood-supply is the result, causing further delay in healing. The separation of the ligatured stump occurs about the fifth day, and at this time the strain of coughing or vomiting is sufficient to cause leakage of bile in the absence of a protective cap of fibrin. He points out that, if a drain is used in the ordinary way for approximately 72 hours, there is little chance of fibrin collecting round the stump at the end of this period, and advises that, if a drain is inserted, it should be placed well away from the site of ligature; in practice this is usually done as a matter of convenience. Most surgeons find the risks of oozing and of possible damage to accessory ducts so serious that drainage after cholecystectomy is likely to remain in vogue. Any leakage of bile, if it occurs, is purely transitory, and if not actually beneficial, is certainly harmless.

THE DRUG TRAFFIC.

A GREAT step forward in the control of the illicit drug traffic was undoubtedly taken when the Treaty of Versailles was made to include ratification of the Hague Conventions of 1912 and 1914, and the League of Nations shouldered the burden of investigating and controlling opium, cocaine, and their derivatives. Nevertheless, the problem remains a very grave one. The world's annual production of opium is about 8000 tons, and it has been estimated that not more than 20 tons are absorbed in medical, scientific, and other legitimate uses. The revolution in China introduced a new difficulty, for the weakened central government is quite unable to put down the revived poppy-growing industry which in 1913 had been completely eradicated. Moreover, a number of States still obtain a large part of their revenue from the sale of these drugs, and they cannot balance their budgets if this source of income is suddenly cut off. The smoking or eating of opium is an ancient habit in many parts of the East and is as difficult to put down as any other time-honoured national custom. Nowadays, moreover, there is a new aspect of the problem—namely, the trade in manufactured products of opium and cocaine, and the gradual invasion of the West by the drug habit. No commodity is easier to smuggle than heroin or cocaine, and the trade is said to be controlled by an international gang with tremendous capital and power.

Two discussions on the subject have taken place in London recently: a conference of the Women's International League on Nov. 14th, and a meeting of the Medico-Legal Society on the 28th. The general opinion of the conference was that nationalisation would prove the only solution of the difficulty. The drug traffic cannot be controlled so long as there is an enormous surplus over and above legitimate needs; the supply must be cut off at the source. To do this production and manufacture must be taken out of the hands of private individuals and made a government monopoly. This was Viscount Cecil's proposal, and it has also been recommended, as Mr. F. Llewellyn Jones told the members of the Medico-Legal Society, by the League of Nations. The conference promoted by the Advisory Committee to the League, appointed in 1920, resulted in an agreement whereby the eight conferring nations—the British Empire, China, France, India, Japan, the Netherlands, Portugal, and Siam—undertook to suppress entirely the consumption of prepared opium in their territories in 15 years from the time when the poppy-growing countries prevented the exportation of raw opium. They recommended that the importation and sale of opium should be entirely a government monopoly.

Great Britain is as advanced, perhaps, as any other country in the control of these drugs. We have passed the Dangerous Drugs Act, 1920, and thereby put our own house in order. One or two voices were raised at the Medico-Legal Society to protest that this Act had introduced tiresome and vexatious restrictions on the legitimate use of morphia and its derivatives, and that the poor were suffering from inability to obtain morphia for the relief of incurable pain. According to our Paris correspondent[1] this is what is happening in France, where "some chemists actually prefer not to stock morphia at all, in order to avoid the annoyance of inspection." On the whole, however, it seems pretty generally agreed that in this country the honest doctor and the honest chemist can prescribe and dispense these drugs without fear or interference. All restrictions are annoying, but they are accepted cheerfully when they constitute a legitimate safeguard, and those who have heard the histories of drug victims or have seen for themselves the effects of cocaine and heroin on individuals or nations will be ready to welcome any reasonable system of control which will break up the trade. Only eight countries are concerned in the manufacture of these drugs, and the League has hopes of improving the situation by persuading each of them to limit its production to a definite quota of the world's legitimate requirements.

TRAUMATIC OCCLUSION.

SOME of the recent work on traumatic occlusion done by Dr. B. Gottlieb and his school in Vienna was reported to the Odontological Section of the Royal Society of Medicine on Nov. 25th by Dr. E. W. Fish. Gottlieb's experiments, he said, consist primarily in placing metal caps on one or two of the teeth of a dog to increase and modify the masticating strain on them. Sections prepared from the jaws of the animals after the caps had been worn for varying lengths of time showed the effect on the teeth and surrounding tissues. In no case was absorption of the cementum observed but the bone was absorbed on the pressure side of the tooth and deposited along the stretched fibres of the periodontal membrane on the side of traction. When the pressure was excessive the periodontal membrane was destroyed and the tooth came in contact with bone. In such cases the bone was absorbed by being undermined and was not absorbed from the surface which came in contact with the tooth. The destruction of the periodontal membrane in these cases has a bearing, said Dr. Fish, on the association of pyorrhoea with traumatic occlusion.

In the discussion which followed, Mr. F. N. Doubleday suggested that the development of sepsis round the metal caps might have some bearing on the destruction of the periodontal tissues. He thought it important to define the term "traumatic occlusion" and hoped some method would be devised for measuring the forces involved. Mr. J. G. Turner was of opinion that an intermittent pressure such as there is in traumatic occlusion would tend to produce hypertrophy and that absorption would occur only under a constant pressure.

THE DISTRIBUTION OF SICKNESS.

THE study of the causes of invalidity is indeed difficult. First we are faced with the apparent anomaly that the sickness-rates of a community increase as its health improves—because a healthy community contains a large proportion of old people. For years now the general mortality-rate has been falling, and the upward trend of sickness has been correspondingly continuous. How far the decline in the mortality-rate has to go before a decline in the sickness-rate appears no one has yet discovered. Secondly we have to remember that sickness is hard to define; the attack of lumbago which may withhold a miner from his work at the coal face may not keep a cobbler from his last or a clerk from the office stool. Hence heavy occupations, although possibly otherwise health-giving, tend to experience sickness-

[1] THE LANCET, Nov. 23rd, p. 1111.

rates heavy in proportion to the occupational mortality. Sir Thomas Neill, who lately reminded us of some of these matters in a presidential address to the national congress of industrial assurance approved societies, has pointed out that climate exerts a powerful influence and quoted the case of men employed in building and engineering construction with exposure to weather. According to the *Times* of Nov. 26th, he said that the average duration of a claim in an area in the north of England was considerably longer than that of a claim in the south of England, as was illustrated by the following table:—

Cause of incapacity.	Excess per cent. of northern area over southern.
Rheumatism	50
Nervous and mental disorders	41
Skin diseases	14
Digestive disorders	21
Respiratory disorders	43
Microbic fevers	38
Accidents	32
All causes	36

Sir Thomas referred also to certain anomalies, as when a clerical worker of a given age in one part of the country has a longer sickness claim than a clerical worker of the same age and sex in another part; and when a woman factory worker in one area suffering from digestive disorder remains longer on the funds than a woman factory worker in another area incapacitated by a similar trouble. Since the industrial population loses every year something between 23 and 24 million weeks' work in England and Wales, study of this enormous economic and social loss is worth while. It is receiving attention from the Industrial Health Research Board, which has already carried out several intensive investigations in cotton-weaving, printing, cotton-spinning, and coal-mining.[1] It has been found that printers suffer most disablement from diseases of the nervous system, and weavers of Lancashire from diseases of the digestive system, which, like other causes of sickness, are particularly high among married weavers. The existence in the total volume of sickness of a substantial proportion of psychoneurotic complaints introduces additional complexity. This group grows when the conditions of life and of work are unfavourable. For example, it was found that coal-miners when working in deep and hot mines experienced more short-time sickness than miners doing similar work in cooler places, but invalidity of long duration was the same for both groups. Miners with similar degrees of slight incapacity not unnaturally have a greater tendency to stay at home when they work under unpleasant conditions. Now that sickness has become so much a financial responsibility and a charge upon industry and the State, efforts must ever be increased to study its causation and its prevention. At present the whole subject bristles with difficulty, and there can be little wonder that the medical sociologist turns from sickness-rates in despair to mortality records, comforting himself with the thought that stone dead knows no fellow.

THE ROCKEFELLER FOUNDATION.

The work of the Rockefeller Foundation is interesting both because it is international and because it is surprisingly polymorphic. The latest report[2] shows progress in many kinds of research. One of the aims is that no worker should be placed in the field until he has had some training in the work to be undertaken, and to this end advice and assistance have been given to medical schools and to nursing and public health training institutions all over the world. At the request of governmental authorities the International Health Division will send representatives to advise on methods of prevention of disease and to assist in the organisation of public health programmes. Financial assistance is usually given only on a small scale so that its withdrawal does not cripple the scheme which it has helped to create. Limitation of activities to the fields described has been found to be necessary, but these are already so wide that a large staff is required to carry on the work involved. Originally, when the Foundation was established in 1913, much attention was devoted to hookworm disease, with incidence surveys and preventive campaigns. Subsequently a similar attack on malaria was undertaken, and in order to further these projects official departments were formed in the countries involved. These departments have since taken over more generalised public health work. More recently the efforts of the Foundation have been directed towards the prevention of yellow fever, and the report includes a description of the methods employed. In North Brazil a representative of the Foundation worked last year in coöperation with the Brazilian Rural Health Service. Antilarval measures were taken at once, and householders were encouraged to realise their responsibility in the prevention of breeding of the yellow fever mosquito, *Aëdes aegypti*. In the absence of a piped water-supply covered water-jars were used, and the number of vessels for each household was reduced to a minimum. Inspections of gutters and drains were instituted. It was believed that by control of the disease in the large coastal cities cases in the less densely populated interior would gradually disappear, a similar plan having been pursued with success in Ecuador, Mexico, and Central America. Unfortunately, however, the transport facilities between the interior towns were such that the disease was continually being carried to non-immune persons, and so persisted. The Foundation is, therefore, to coöperate with the National Department of Public Health of Brazil to extend antilarval work to some of the large interior towns of Northern Brazil. A laboratory was established at São Salvador, and experiments performed which go to show that an attack of Brazilian yellow fever protects against the African virus. It was to study the identity of American and African yellow fever that Hideyo Noguchi went to West Africa during the early months of 1928. He lost his life in the course of work at Accra, on the Gold Coast, while the West African Commission had its headquarters at Lagos. Here experiments were successfully carried out to determine the period of extrinsic incubation—that is to say, the interval between the infecting meal and the time when the aëdes mosquito can transmit the disease by its bite—a period now definitely fixed at 9 to 12 days. Further work undertaken included the determination of the species of mosquito, which are capable of transmitting the disease, and experiments on the protective value of convalescent serum. A laboratory for experimental comparison of the different strains of virus has been established at New York.

[1] A. B. Hill: An Investigation of Sickness in Various Industrial Occupations, Jour. Roy. Statist. Soc., 1929, vol. xcii., Part II.

[2] Copies of this report may be had without charge from the Rockefeller Foundation, 61, Broadway, New York.

ELSEWHERE in this issue it is announced that Lieut.-Colonel W. P. MacArthur has been appointed Consulting Physician to the British Army.

THE sudden death is announced from Perth, Western Australia, of the Hon. Athelstan John Henton Saw, Chancellor of the University of Western Australia. Dr. Saw, who graduated in medicine at Cambridge in 1894, was 61 years of age.

AT the recent election of Direct Representatives on the General Medical Council, Dr. H. B. Brackenbury received 12,563 votes, Mr. N. Bishop Harman 11,948 votes, and Dr. Arthur Haydon 2019 votes. Dr. Brackenbury and Mr. Harman were accordingly elected.

The Clinical Interpretation of Aids to Diagnosis.

A Series of Special Articles contributed by Invitation.

LV.

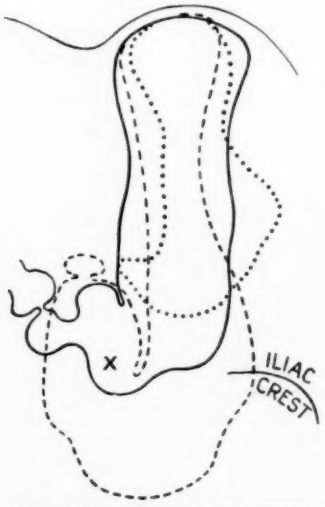
INTERPRETATION OF RADIOGRAMS OF THE ALIMENTARY TRACT.

PART II.*—THE STOMACH.

THE length of the stomach varies; moreover, it has no fixed points. It is merely suspended at either end—i.e., (1) where the œsophagus emerges through the diaphragm and (2) where the junction of the first and second parts of the duodenum is attached; this is the point where the two layers of peritoneum that completely surround the stomach and first part of the duodenum separate, forming the hepatoduodenal ligament and leaving the posterior wall bare. Between these two relatively fixed points the stomach hangs and, according to the length of stomach that lies between them, we have widely different forms that have been described as "J," "cow's horn," "fish-hoop" shaped, "gastroptotic," and so forth. Moreover, in the living subject the anatomical position of the attachment of the duodenum is far from being a fixed point. It varies within fairly wide limits in the normal subject and is, moreover, capable of moving an inch or more on palpation. On one occasion I actually manipulated this part of the duodenum across the middle line to the region of the hilus of the left kidney. Little wonder then that we have such very wide variations in the appearance of stomachs which function normally. It does not materially help us to classify them into hypertonic, sthenic, and hypotonic varieties. If we can gain a living conception of a living organ, that is what we need; no one picture can represent the normal.

The recognition of the possible divergencies that occur within the normal is fundamental (Fig. 6). Inexperienced radiologists, like inexperienced clinicians, will always tend to regard every departure from their conception of the normal as a pathological condition and attribute to it symptoms for which it is in no way responsible. The stomach that extends well below the umbilicus is not necessarily pathological, nor are we justified in speaking of "gastroptosis" on this account. Tall, thin women particularly have this long type of stomach that, in the upright position, extends well below the so-called normal level, corresponding approximately to the umbilicus (4th to 5th L.V.) (Fig. 7). Such stomachs are not necessarily associated with symptoms any more than the short, hypertonic type (Fig. 8) met with in the short, dumpy muscular man that extends only to, say, two inches above the umbilicus. Such variations are not likely to give rise to symptoms except from mechanical causes. Chief among these is the possibility of drag upon the duodenal attachments, a condition that is not always easy to recognise, and is often associated with typical duodenal symptoms, and even with duodenal ulceration. The normal level of the highest part of the duodenum is about the 2nd and 3rd L.V., and if it retains this position when the stomach extends to, say, three or four inches below the umbilicus—that is, well into the pelvis—then we are likely to get drag. But in the case of patients with low stomachs who have no symptoms, we often find that the attachments have allowed the duodenum to come down to perhaps below the level of the crest of the ilium—4th to 5th L.V. Presumably this is why they are free from symptoms. Gastroptosis, of course, exists, especially as a mani-

FIG. 6.

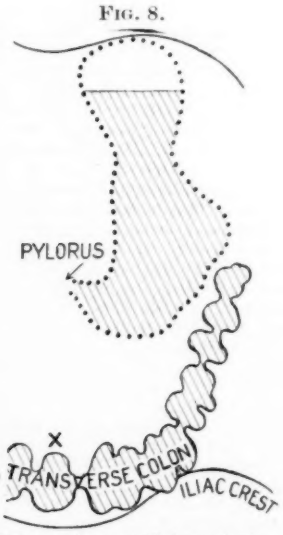


This diagram represents superimposed tracings of three stomachs that were regarded as normal. They are all common types. We are inclined to call the one represented by the continuous line normal, that by the dotted line hypertonic, and that by the broken line as the long type—it is not hypotonic (atonic), since the tone is perfect, nor does it indicate gastroptosis; it is simply a long type of normal stomach.

FIG. 7.

Normal long type of stomach, extending 4 or 5 inches below the crest of the ilium. Note the rugæ showing in the upper part of the stomach. The duodenal cap (A) is rounded, directed upwards, and its attachments have allowed it to drop and adjust itself to the low position of the stomach.

FIG. 8.

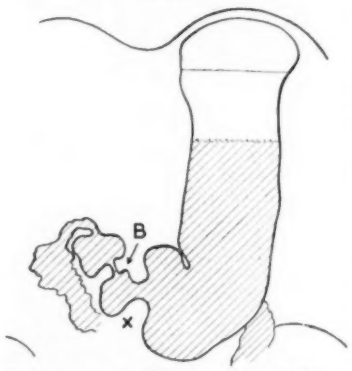


Tracing of a small hypertonic stomach. Not only is the lower border of the stomach high, but the transverse colon is drawn up to the level of the iliac crest. In this figure and the following ones X indicates umbilicus.

* Part I., The Œsophagus, appeared last week. The Duodenum and Intestines will be dealt with in future issues.

festation of Glénard's disease, but the symptoms do not apparently arise from the gastric displacement per se. This subject is dealt with in a most complete and masterly way by H. Bedingfield in the *Quarterly Journal of Medicine* for July and October, 1929. The literature surveyed and analysed covers over 600 references.

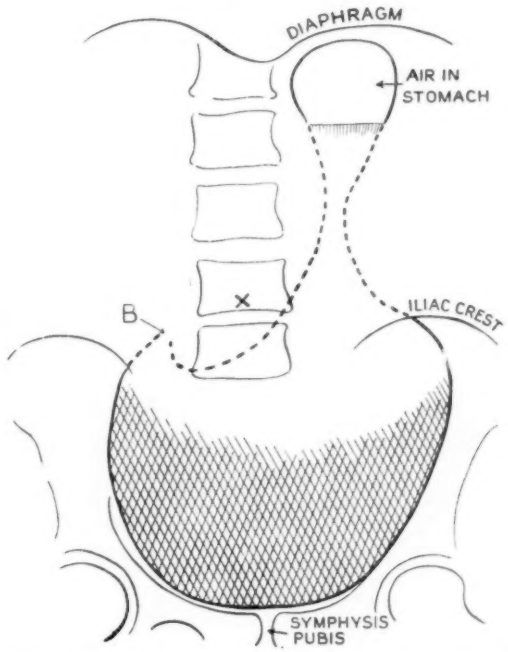
FIG. 9.



Tracing of a film to show hypersecretion. Note that the secretion poured out rises to the top of the heavy opaque food, leaving a non-opaque space between the air space and the contrast meal. On giving Na_2CO_3 the air space will increase by $\frac{1}{2}$ inch or more if the secretion contains abundant free acid. The long pyloric canal (B) suggests the possibility of a pyloric ulcer, a condition in which hypersecretion is often seen. The appearance of hypersecretion is exactly simulated by an opaque meal which is not adequately suspended and rapidly settles down. Apart from hypersecretion and the long pylorus, the stomach is normal.

As to function, we have very few guiding points. *Hypersecretion* (Fig. 9) can be recognised by the accumulation of non-opaque fluid above the opaque meal, provided, of course, that the meal has been so made that the barium salt in it has not settled out. By giving an ounce of saturated solution of sodium bicarbonate we can roughly gauge the quantity of free acid in this secretion from the amount of CO_2 evolved. Very active hypersecretion that is apparently unduly acid is often associated with ulceration close to the pylorus. Secretion that is deficient in free acids is not necessarily associated with carcinoma, but, in my experience, is not met with in ulceration, so that this sodium bicarbonate test is of some value. *Peristalsis* is very variable and, apart from extremes, little reliance can be

FIG. 11.



Tracing from a case of extreme old-standing pyloric obstruction. The stomach shows a line of retained fluid or secretion below the air space in the fundus. The lower border shows a crescentic outline that marches with the symphysis and rami of the pubis. No trace of peristalsis is seen. B = pylorus.

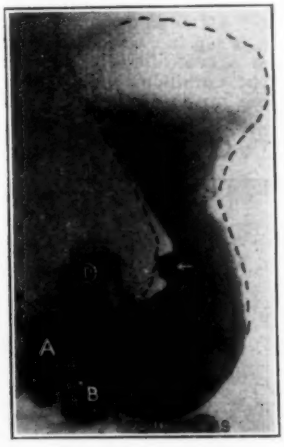
FIG. 10.

Very abnormally active peristalsis of the stomach, associated with a small ulcer near the pylorus that was eventually detected by palpation methods. Patient recumbent—the fundus is filled with opaque food.

FIG. 12.

Long stomach ("gastroptosis"), showing result of air swallowing. Stomach maintains its tone, yet extends almost to the symphysis pubis. The patient is an air swallower, and the air extends down the stomach to the level of the iliac crest. Below this is a layer of fluid—secretion or retained food. The opaque food lies in the lower part and does not fill the pars pylorica. There is no information from the picture as to whether the duodenum has come down or not. Probably it has, or there would have been a large residue of retained food in so marked a case. B indicates the probable position of the pylorus.

FIG. 13.



Large ulcer on lesser curve. The dotted line indicates the probable outline of the stomach wall, and suggests thickening of the mucous membrane about the ulcer. There is a wave of peristalsis close to the pylorus, and the duodenal cap is well filled. Note how the food is divided up in the duodenum as soon as it has left the "cap." The duodeno-jejunal flexure (D) is also seen. Patient standing.

placed upon it as a diagnostic point. Normally the waves succeed each other at the rate of three a minute and are of moderate depth. Occasionally we see the stage of acute obstruction when the peristaltic waves are enormously powerful and the stomach almost writhes; such an appearance is typical of acute obstruction, but it does not tell us whether the obstruction is organic or spasmodic (Fig. 10). The other extreme in peristalsis is the entire absence. In a normal stomach this is not necessarily of pathological significance and is likely to be due to some transitory cause, perhaps a headache or even mere nervousness. Peristalsis is almost completely absent in Fig. 12 (see p. 1211). It is only just indicated by the drawing in of the greater curvature and narrowing towards the lower part.

Reverse peristalsis, running from the pylorus towards the fundus, is not very rare, and when met with it always indicates a definite and probably an extensive lesion near the pylorus, usually on the lesser curve.

The *retention of a residue of food* in the stomach always tends to sag the stomach down, and this in turn makes it more difficult for the organ to empty itself. In such cases the tone becomes deficient and the food all sags to the lowest part. There is little or no attempt to maintain the normal tubular form against the action of gravity. The resulting picture is a crescentric shadow of opaque food well below the umbilicus. If on the outline of this shadow we see no evidence of peristaltic waves, or even more important, if we see a series of waves of diminishing intensity followed by a period of rest, we know that we are dealing with a case of definite *pyloric obstruction* (Fig. 11).

FIG. 14.

Chronic "penetrating" ulcer near the lesser curvature on the posterior wall. Note the puckering of the mucous membrane. The dotted line indicates the probable outline of the actual wall of the stomach. There is some spasm and consequent hour-glass contraction—probably no organic narrowing. The raggedness of the greater curvature near the narrowing is due to folding of the mucous membrane. The ragged filling defect at the lowest part is due to pressure that has been employed to fill up the crater by manipulation, and the opaque food has not come back into it. Patient lying down and rotated so as to bring the ulcer crater on to the profile of the shadow. B = pylorus.

FIG. 15.

Ulcer on lesser curvature. Note the suggested thickening of the surrounding mucous membrane. The greater curve is ragged, owing partly to the irregularity of the mucosa, but chiefly because it is only partially filled—there is some atony and the food is sagging to the lowest part, leaving the upper half partially filled. The cone shape of the ulcer suggests that the ulcer is healing. The dotted outline indicates the probable outline of the stomach wall. A = duodenum.

Air swallowing with the food is, up to a point, normal, but in certain patients, particularly nervous women, it is excessive, resulting in an accumulation of air in the stomach that is usually brought up with violent and noisy eructation. The patient is quite unconscious of what she is doing and imagines she is generating all this air in the stomach. In such a subject, if we mention that she has air in the stomach and instruct her to bring it up, we see the enlarged air space suddenly diminish, and more often than not, immediately enlarge—she has swallowed more air. Sometimes one can get the patient to distend the stomach with air until the clear area stretches to the level of the umbilicus (Fig. 12). It is an unpleasantly noisy and offensive neurosis that is easily cured by preventing swallowing; one cannot swallow unless the mouth is closed and a cork between the back teeth has brought relief to many.

Air sucking is a different and more complex story that depends on diaphragmatic action chiefly and its treatment in men, as in horses, is as yet unsolved.

FIG. 16.

Growth at the pyloric end of the stomach, probably extending to the duodenum. The dotted outline suggests the true outline of the outside of the stomach wall—the opaque food gives the inner outline only. By palpation we can usually determine the extent of such a growth, and also whether it is adherent. B = probable position of the pylorus.

Rapid emptying of the stomach is noted in association with many conditions, hunger, persistence of purgative action, irritative lesions of any part of the tract—quite often without any obvious cause. But when we note rapid emptying at the beginning of digestion and yet find that there is an appreciable residue of the five-hour meal there are several sites that are at once laid under suspicion—i.e., the gall-bladder, the pylorus, and the appendix.

Delay in emptying, retention of a residue beyond the five-hour interval does not necessarily indicate a lesion at the pylorus or duodenum, or elsewhere for that matter. There are numerous causes that are possible—e.g., headaches, nervousness, gall bladder or appendix trouble, &c., but unless some satisfactory explanation is forthcoming, the observer should confirm the observation and, if it is still present, he should insistently search the pyloric region for the slightest suggestion of the crater of an ulcer.

Gastric Ulcer.

The diagnosis of gastric ulcer is now always made on direct evidence and there should be very few mistakes. The indirect evidence, the formation of an hour-glass contraction due to spasm, although of value in directing our attention and focusing our palpation efforts to show the crater, is of itself not of very first-rate importance, owing to the possibility of such conditions being reflex. The direct evidence consists of the demonstration of the filling of the pocket of the ulcer, and it is surprising what very small ulcers can be demonstrated by a radiologist who is skilled in palpation. It is essential for this purpose that the first mouthful of opaque food to enter the *empty* stomach should be a very thick cream of almost pure barium sulphate. The radiologist should palpate and manipulate this food as it canalises the empty stomach in such a way that he outlines all the folds of the rugæ, pushing the food up and down between them, and eventually allowing it to come right down to the pylorus. It sounds easy, but in practice it is often an extremely difficult manipulation, particularly when the abdominal wall is powerful. Moreover, the radiologist must be extremely careful in the control of the illuminated area, otherwise his hand will be unduly exposed to radiations and eventually he will suffer. It is often necessary to palpate in this way both in the upright and in the supine positions, for it is only in this position that we can satisfactorily fill the cardiac end of the stomach where, fortunately, ulceration is comparatively rare.

The most difficult part of the stomach in which to demonstrate an ulcer crater is the pyloric antrum, and very frequently it requires persistence and the exercise of considerable physical power in order to obtain the necessary information. Occasionally in the presence of florid, flat ulceration near the pylorus it is impossible to demonstrate any abnormality.

When the palpation of the first mouthful has been carried out, more food—about half a pint—is given, and the profile of the shadow searched by turning the patient round. In this way the niche of an ulcer that has been demonstrated by the palpation method can be brought onto the edge of the shadow and a radiographic record of it obtained. It is often extremely difficult, if not impossible, to obtain a satisfactory film to show the pocket of a small ulcer; some of these can only be demonstrated by the palpation method.

The nature of an ulcer that is shown on an X ray film is open to question (Figs. 13, 14, 15). What looks like a large ulcer penetrating right through the wall of the stomach is not necessarily a very deep one, for the mucous membrane around the ulcer appears to be heaped up, forming a large crater. The result is that the pocket gives the appearance of being very much deeper than it actually is. The smallest ulcer that I have seen excised measured only an eighth of an inch and hardly involved the whole thickness of the mucous membrane; yet the pocket that it produced, and which I filled by palpation, must have been ¼ or more an inch in diameter, and knowing where to look for it, I could obtain quite a definite projection on the outline of the shadow when the stomach was filled. The only point I know of as a guide to the actual depth of an ulcer is the information one can obtain from palpation. If we can determine that the ulcer base is fixed, we can assume that it has involved the peritoneal coat and become adherent. Sometimes the pocket of the ulcer is so deep that a bubble of air is trapped above the opaque food. Yet even in these cases it does not follow that the ulcer is a true penetrating one—some of these ulcers when excised have shown no suggestion of penetration but merely involvement down to the muscular layer, which was infiltrated and almost cartilaginous. The X ray appearance of penetration must therefore be due to the heaping up of the mucous membrane. The healing of an ulcer can be watched and the manner in which it becomes smaller noted. As it heals, the niche becomes conical—a conical crater very strongly suggests a healing ulcer.

The old-standing ulcer with cicatrisation is now comparatively seldom seen, although these cases were very common in the early days of the opaque meal. An hour-glass contraction is formed and on palpation it is usually possible to find the crater of the ulcer if it is still active. Spasm enters into these contractions to a very large extent, and it is impossible to foretell what degree of narrowing will be found in the operating theatre. It is, however, nearly always far less marked than one would expect from the X ray appearances, since spasm invariably plays a large part.

It is the ulcers near the pylorus on the lesser curvature that are most difficult to diagnose. Delay in emptying of the five-hour meal, intermittent activity of peristalsis, hypersecretion which seems to be abnormally acid, and perhaps a tender point on palpation should always tend to make the radiologist extremely careful and thorough in his detailed examination of the pyloric antrum. Minute ulcers in the pyloric canal are sometimes met with. In addition to one or more of the above signposts, a pyloric canal that appears to be longer than normal will suggest a very careful search for the crater. Unless we can demonstrate the crater, we may suspect the presence of an ulcer but we cannot make a definite diagnosis. Pain on applying pressure to the site of the ulcer is sometimes very definite; quite as often, there is no suggestion that the ulcer is sensitive to pressure, but what determines this is quite unexplained.

Diverticula of the stomach may occur at any point on the lesser curvature. They are rare and the appearances are those of a deep "penetrating" type of ulcer.

New Growths.

The diagnosis of new growths proceeds on the same lines as those employed for the detection of ulcers, but the resulting X ray picture is exactly the reverse—namely, instead of the food-filled pocket produced by an ulcer we have the displacement of the opaque food by the growth, a filling defect (Fig. 16), or a notch. In our palpation of the first mouthful as it canalises the empty stomach, we will probably note deformity of the ordered channels of the rugæ running in the length of the stomach, and displacement of the opaque food. In palpating we may detect resistance due to the growth, and by manipulation we attempt to discover whether or not there is undue fixation—infiltration of the growth into surrounding tissues. A large growth presents no difficulty in diagnosis, but the early growth is often almost, if not quite, impossible to diagnose. A curious and unexplained feature of growths is the fact that the stomach tends to empty rapidly. Note the way in which the second and third parts of the duodenum are shown in Fig. 16; this is due to rapid emptying and consequent overloading. A plaque of growth in the wall, even if it does not cause any filling defect, may cause an interruption of the peristaltic wave. This is not easily detected on the screen, and is best observed by making a series of films in such a way that the

suspicious portion is on the profile. A comparison of serial films will clear up the point.

The outline of the normal greater curvature is not always regular—it is quite often "crenated," giving the appearance of the jagged inroads of an extensive growth. Palpation reveals the absence of any tumour, and it may be possible actually to palpate out the cause of the appearance, that is, the oblique direction of the rugæ which pass over the profile irregularly instead of running parallel with it, as usually happens. A growth on the anterior or posterior walls will displace the opaque food and give comparatively transradiant areas in the midst of the opaque food. Manipulation will show up these invasions of the cavity most satisfactorily.

It is always easier to make a positive than a negative diagnosis, and in any case of doubt a further examination after an interval is the safest line to take. The responsibility of the radiologist is a very grave one, and often the clinician will unwittingly press him into expressing an opinion which his observations are not sufficiently definite to justify. There are times, only too many, when it is the obvious duty of the radiologist to hedge and play for time to make more clear the signs on which he has to rely. My own experience is that the doubtful cases nearly always turn out to be negative as regards growth.

In this brief survey many possible lesions are omitted, leather-bottle stomach, papilloma, syphilis, tubercle, &c. They are all, however, so comparatively rare that, together, they do not account for more than a very small percentage of pathological cases.

A. E. BARCLAY, M.D. Camb.,
Lecturer in Radiology, University of Cambridge.

A MEDICAL MASTER OF THE HABERDASHERS' COMPANY.

Dr. Walter Carr, consulting physician to the Royal Free Hospital, is the new Master of the Haberdashers' Company, and a number of medical men attended the Livery dinner held at the Company's Hall on Nov. 28th. Sir John Rose Bradford, President of the Royal College of Physicians, replying to the toast of the "Medical Profession," proposed by Alderman Maurice Jenks, said that it was an especial pleasure to be present because he had known Dr. Carr since they were at school together. The medical profession nowadays occupied a curious position, because although the public were always ready to believe what doctors said about preventing disease, they were by no means ready to accept advice about treatment. For this they preferred unqualified advice—which was strange, because no sensible person would get a picture painted by an artist who had not been trained, or take the opinion of a lawyer who had not been trained, or get a house built by an architect who had not been trained. Fortunately the City companies had always given generously to hospitals and research, and 50 years ago, when it was difficult to get money for such an unfashionable object as scientific investigation, the City companies had given striking examples of benevolence in this cause. Mr. V. Warren Low, vice-president of the Royal College of Surgeons, said that the attitude of his college towards the companies was that of a poor relation towards a wealthy aunt. But few aunts, he thought, had shown such generosity, especially towards research. Replying to the toast of "The Guests," proposed by Mr. G. Woods Woollaston, Norroy King of Arms, Sir Humphry Rolleston, Regius Professor of Physic at Cambridge, spoke of the work of the Haberdashers' Company for education and for the care of the aged. This was an *annus mirabilis* in the City from the medical point of view, for the Haberdashers, the Drapers, and the Pewterers—not to mention the Apothecaries—had all chosen medical Masters. The choice of Dr. Carr was an exceedingly wise one, as he could testify from 30 years of friendship. In replying to the toast of "The Haberdashers' Company," proposed by Mr. R. M. Holland-Martin, Prime Warden of the Fishmongers' Company, Dr. Carr expressed his great pleasure at fulfilling a long cherished desire to entertain his medical friends in the Company's Hall. Among those present were Dr. Robert Hutchison, Dr. H. Morley Fletcher, Mr. Samuel Osborn, Sir Farquhar Buzzard, Mr. Percy Flemming, and Sir Holburt Waring.

Special Articles.

SOME OBSERVATIONS ON SCANDINAVIAN SURGERY.

BY T. HOLMES SELLORS, B.M. OXF.,
G. H. HUNT TRAVELLING SCHOLAR, UNIVERSITY OF OXFORD SURGICAL REGISTRAR, MIDDLESEX HOSPITAL.

I.

THESE articles are based upon experiences gained from six months' study in the hospitals of Scandinavia and Central Europe. It was my good fortune to be the first G. H. Hunt Travelling Scholar from the University of Oxford, and I gratefully acknowledge the kindness of the trustees of the scholarship for their approval of my wish to study general surgery, with particular reference to that of the chest, and the use of radium. I also thank the Committee of the Middlesex Hospital for leave of absence during that period. I was much impressed by the internal convenience and management of the Swedish and Danish hospitals, with their small wards and many theatres en bloc, but these have recently been so fully described[1] by Mr. H. S. Souttar that further enlargement is unnecessary.

Although these observations profess to deal with certain special branches of the art, a few general impressions may be interesting to some readers. In Great Britain general anæsthesia is the rule, local the exception. On the continent the reverse obtains—general anæsthesia has a limited application and local a far wider, and is even used for such extensive operations as thoracoplasty and gastrectomy. Gastric operative surgery is almost resolved into gastro-duodenal resections after the methods of Billroth I. and II.; gastro-enterostomy is rare. Prof. Finsterer, of Vienna, is a revelation of exactness and patience in all gastric operations, particularly in those for extensive cancer, all under local anæsthesia. Gastro-enterostomy is never performed in the presence of simple ulceration. Interrupted sutures are universally used, and small needles in a holder preferred to large. The technique of treatment for fractures of long bones varies in almost every clinic, but the underlying principle is the same—viz., extension by callipers or transfixion pins. Prof. Einar Key deals with certain fractures—e.g., spiral of tibia (a frequent result of ski-ing accidents), and both bones of the forearm with inward displacement, by immediate operation. Bone-grafts are always preferred to plates.

From these incidental observations I turn to the

USE OF RADIUM AND X RAYS AT RADIUMHEMMET, STOCKHOLM.

The Radiumhemmet is the centre for the control of radium in Sweden, and at the beginning of this year had two grammes of the element at its disposal, but with the prospect of a larger stock in the near future. There are two other clinics situated a long distance from Stockholm, and these control small supplies, but beyond them no other hospital possesses radium. Patients who are recommended for treatment come under the sole care of the Radiumhemmet, and are treated on the understanding that they will attend for re-examination at regular intervals. State-aid for travelling is given if necessary. An admirable registration and follow-up system is in use, patients being indexed under three separate headings—name, disease, and time for attendance, while dictaphones are freely used for note-taking. The Radiumhemmet only possesses about 40 beds, and as a result the majority of their extensive clinic are treated as out-patients. The Institute is under the control of Prof. Gösta Forssell, with Drs. Berven and Heyman

[1] THE LANCET, August 3rd, p. 242.

in charge of the general surgical and gynæcological departments respectively. In addition there are assistants who have had at least three to four years' training in radiology before reaching the Radiumhemmet, and there are well-equipped pathological laboratories for investigation and research. The technique and fundamentals of the treatment now in use have been arrived at after considerable experience, dating from about 1910, and have been influenced to some extent by the available quantity of radium. The whole outlook is scientific and is continually changing in an endeavour to find new forms of treatment to replace those that do not give satisfaction over a period of several years. Every patient submitted to the Radiumhemmet comes under its absolute control if suitable, no matter what organ of the body is affected, and the employment of major surgery is at the discretion of the clinic. At the present time radical surgery is frequently used in conjunction with radiology, since the figures for the combined technique are definitely superior to those in which surgery alone, or radiology alone, is employed.

When major surgery is required, the patient is operated on in another hospital in the town by a chosen surgeon, while a doctor from the Radiumhemmet is generally in attendance. It is, however, possible to perform operations at the Radiumhemmet itself, but these are usually confined to electrocoagulation by means of endothermy in conjunction with radiological treatment. The visitor is bound to be impressed by the expert clinical knowledge of malignant disease during all its stages, and there is no attempt to expatiate on the virtues of any particular method. The accuracy of results and observations for publication are definite and the limitations of radium are fully realised in spite of its obvious value in many cases. Biopsy, in the absence of active treatment at the same time, is not favoured, and as a result of their experiences the Radiumhemmet has circularised the medical profession of Sweden, requesting them to forego this examination unless they are treating the condition radically at the same time.

Almost exactly the same principles apply to the Copenhagen Radiumstation in Denmark.

Methods of Use of Radium.—Radium is applied in three ways :—

Intubation.—10 mg. tubes 0·3 mm. lead equivalent screen for buried radium.

Surface Application.—Doses vary; also screen, according to range at which applied.

At a Distance.—Lysholm cannon, with extra 3 mm. screen for deeper radiation over given fields, usually at 5 cm. distance. 20–25 gramme-hours constitutes an erythema dose.

X rays and radium are used so as to avoid marked damage to the general tissues of the body and exposures to them are designed so as to submit as small a volume of the blood stream as possible to the radiation. Reaction is gauged by frequent examination of the blood count, and overdose is shown by a leucopenia, in which the lymphocytes especially are diminished.

Treatment of Special Conditions.

Benign.—Skin and vessel tumours, such as hæmangiomata and warts, are frequently treated by radium in the form of surface applications. Toxic conditions of the thyroid are freely irradiated, starting with very small doses, so as to avoid any exacerbation of symptoms, and with the definite knowledge that surgical intervention will be necessary if the condition does not respond promptly and adequately. A special applicator is used in hypertrophic conditions of the tonsil, which cannot be submitted to operation. Chronic interstitial mastitis is regarded as potentially precarcinomatous and is treated by X rays. Continued observation is deemed essential, but simple removal of the breast is rarely performed for this condition. Leucoplakia is also actively treated on account of its precancerous tendency by superficial endothermy after the area has been cocainised. The coagulated tissue separates off later as a slough, leaving a satisfactory scar. The analgesic effect of X rays on certain common conditions is made use of in many clinics, apart from the Radiumhemmet. Osteo-arthritis of superficial joints may gain considerable relief, while chilblains, whitlows, and furunculosis may improve appreciably.

Malignant Disease.

Oral and Buccal Carcinoma.—From the existing Radiumhemmet figures it is found that there is some variation in the radio-sensitivity of different situations. For example, the lymphosarcoma of the tonsil responds very promptly to radium application, and gives a satisfactory prognosis if there is no glandular involvement. On the other hand, carcinoma of the cheek is comparatively insensitive and, as secondary infection is often present, the main result of radiation is central necrosis with extension of the growth at the periphery. This form, therefore, is more frequently treated by endothermy, sometimes supplemented by radium at a distance. Cancers of the tongue are usually submitted for a start to two cross-fields of radium at a distance with the cannon (20–25 gramme-hours). The affected area is then coagulated between two small plate-electrodes with endothermy, and the periphery intubated with short 10 mg. radium needles inserted vertically for 2 to 4 hours, the tubes roughly being 1 to 1·5 cm. apart. The glandular fields are treated according to their condition. If there are no palpable glands a course of radium at a distance, to total about 20–30 gramme-hours is employed. If on observation there are found to be glands palpable, but not definitely adherent, they are submitted to block dissection by one surgeon, Dr. Hybbinnette, and radium may be buried. The opposite side is treated on the same principle. When the glands are advanced, this is when they are fixed superficially or deeply, radiation is employed, principally with the radium cannon, the dosage being watched very carefully to prevent breaking down of the mass. Carcinoma of the lip is treated on the same lines.

Carcinoma of the Breast.—Formerly the usual treatment of carcinoma of the breast consisted of the radical operation, followed by post-operative courses of X rays, but in recent years preoperative radiation has been employed in addition. Though the actual figures are not yet to hand, there has been a considerable improvement as the result of this and the preoperative radiation is held to be of more value than the post-operative. Preoperative radiation is so timed that the radical and full surgical operation is performed when the tumour is under the maximum effect of the radiation. Microscopically, the tumour cells at this time show, over large areas, degenerative changes with poorly staining nuclei and disintegration. The presence of giant cells also indicates reaction of surrounding tissues against the tumour. Macroscopically, the size of the tumour diminishes, and some cases, which have been classified previously as inoperable, come under the heading of operable cases.

Operable Cases.—The primary tumour is irradiated so as to expose as small a quantity of blood as possible to the radiations over two fields, each receiving 4 to 6 treatments, and each treatment of 1/3 to 1/4 erythema dose (½ Cu. +1 mm. Al. filter) at a distance of 40 cm. Affected glands in the axilla are treated on similar lines. Some slight redness of the skin will result, and 3 to 4 weeks after the treatment has been concluded the radical operation is performed. The timing of the operation is a matter of considerable importance. The post-operative treatment has been carried out with relatively small doses, the general reaction of the patient being carefully watched. Massive irradiation of the thorax was tried some time ago, but was soon abandoned. Two to four weeks after operation two or three fields are irradiated with 1/4 to 1/6 E.D., with 4 to 6 treatments each (4 mm. Al. filter at 50 cm.). The series of treatments usually covers about a fortnight, and the reaction should scarcely be noticed on the skin. Three months later

a second similar series may be given, and a third after yet another three months.

Inoperable Cases.—The tumour with its lymphatic field is treated with similar doses as stated in the preoperative series, and this is carried on until the tumour does not respond by further diminution in size. Then the primary growth is excised with diathermy, making no attempt to form flaps. A large raw area is left, and this is allowed to granulate over, a process which may take some time. In addition, sterilisation by large doses directed against the ovaries is performed, and thyroid is given by mouth. Palliative results over several years have been obtained on these lines, and in a few cases even an apparent cure.

Recurrences.—In cases with recurrences and metastases extensive radiation is not highly valued, since the patient, as a whole, can too easily be damaged. As a result the recurrences are treated either by surface application or by intubation with radium. Rib and bone secondaries respond quite well to this form of treatment, and where possible radium at a distance is often employed. When secondaries occur in the spine, hip, or pelvis the analgesic effect of X rays is valuable, and, in a few cases, relief for some years has resulted.

The lines of treatment, as given above, are preferred to other measures, such as burying radium round the primary tumours and glands, but when sufficient is available the use of radium at a distance has definite possibilities.

Uterine Cancer.—For carcinoma of the cervix operation at the Radiumhemmet has been abandoned, and all cases are submitted to radium treatment. Without anæsthesia, and following routine cystoscopy, an intra-uterine applicator with 3 mm. Pb. screen of about 40 mg. is inserted into the dilated cervix. The vaginal applicators to total about 77 mg. are packed round the cervix, great care being taken to protect the vaginal wall, and so prevent rectovaginal fistulæ. These are left in about 20 hours, and the treatment is repeated in 1 to 3 weeks. Treatment on the same lines is carried out in England with considerable success. This branch is under the control of Dr. Heyman, who combines the rôles of gynæcologist and radiologist.

Skin.—Skin cancers, including rodent ulcers and epitheliomata, give good results when treated by surface application and intubation. The doses are so applied as to produce a good scar. Sarcoma of bone, muscle, and melanomata are treated extensively by radium and X rays, but the results are very disappointing. Carcinoma of the œsophagus and stomach are occasionally treated by cross-fire with X rays, but with no hope of other than temporary palliation. Carcinoma of the rectum is preferably treated by the surgeon, but if X rays are used a preliminary colostomy is deemed to be essential. The burying of radium round the growth demands so wide an exposure to obtain a successful result that practically the standard radical operation has to be performed to ensure its proper application.

In conclusion, I should like to state how much I was impressed with the clinical knowledge of tumours during the course of treatment, and with the balanced judgment of each worker in regard to the prognosis.

EAST HAM ISOLATION HOSPITAL.—The Ministry of Health last week held an inquiry into the application of the East Ham town council to borrow £42,000 for the enlargement of the council's isolation hospital, which is badly overcrowded. Dr. W. Benton, the medical officer of health, stated that to comply with the standard laid down by the Ministry there should be 88 beds only, whereas there are at present 132. It further appeared that some of the nurses sleep in an old army hut, "unbearably hot in summer and very cold in winter," and that an old corrugated iron hut, formerly a store-shed, is used as a dormitory for members of the domestic staff.

THE MEDICAL USES OF RADIUM.

THE Medical Research Council publishes this week a summary of the results of research work carried out at various institutions with the stock of radium salt entrusted by the Government to the Council[1] As the preface points out, from being a doubtful empirical palliative measure for inoperable cases, radium therapy has, during the last eight years, become a curative method of primary value and in some instances is superseding surgery. The Radiology Committee of the Council have allocated the radium at their disposal to the following centres: the Middlesex Hospital; University College Hospital; St. Bartholomew's Hospital; King's College Hospital; St. Peter's Hospital; the Marie Curie Hospital; the General Hospital, Birmingham; the Royal Infirmary, Cardiff; the Royal Infirmary, Aberdeen; and the Irish Radium Committee, Dublin. The committee sound a note of caution in their introduction, for they feel that there is danger lest the general expectation of the public should outrun the real probabilities of radium therapy. "Radium should at present be looked upon," they say, "as an agent for the treatment of localised cancer, and the more limited the region affected the more chance there is of success. Once the disease is generalised the use of radium is mainly palliative."

As in previous years, the reports are conveniently grouped under the headings of regions of the body.

Cancer of the Breast.

The Middlesex Hospital has obtained the best results by using radium at a distance of several centimetres, so that no skin damage has been caused. They suggest the application of greater quantities at still greater distances. For small superficial nodules three or four applications of 10 mg. (gamma rays only) to the square centimetre, half a centimetre away, for four to six hours, usually proved sufficient. Larger nodules were treated from a distance of 2 cm. They have not found that small doses for a long time constitute a good treatment for breast cancer. The usual deep therapy has been a suberythematous dose throughout the area of disease at two or three three-weekly intervals; wide variations in quantity, concentration, distance, and time all gave satisfactory results.

Most of the patients at St. Bartholomew's Hospital were treated by radium needles screened by 0·5 mm. of platinum; a good result was obtained in 45 out of 67 patients so treated. In Dublin[2] needles containing 5–10 mc. radon in 0·4 mm. of platinum or 0·3 mm. of gold were embedded circumferentially around the primary growth and left until 2 mc. per c.cm. of neoplastic tissue had been dissipated. X rays were applied to the glandular regions in divided doses over a week. The early results were satisfactory.

Cancer of the Uterus.

The report of 1927 suggested that better results were being obtained from the Stockholm technique than from any other; this suggestion has been confirmed by the figures for 1928. Of 579 inoperable cases only 139 are alive, but it may be concluded that the radium treatment of operable cases is likely in proper hands to give lasting relief. The difficulty with inoperable cases is that some parts of the disease cannot possibly receive anything like a lethal dose. At St. Bartholomew's Hospital the Brussels technique has been modified by substituting needles for tubes. The external growth is first treated vaginally, and when it has disappeared and all ulceration healed, the abdomen is opened, the liver, pelvic organs, and aortic and iliac glands are examined, and the uterus pulled forward; the needles are inserted, so that only the eye protrudes from the peritoneum, 1–1½ cm. apart, from one

[1] Special Report Series No. 144: Medical Uses of Radium. Summary of Reports from Research Centres for 1928. H.M. Stationery Office. 1929. Pp. 28 and viii. 1s.

[2] Report published in Sci. Proc. Roy. Dub. Soc., 1929, xix., 277.

sacro-iliac synchondrosis to the other. Four or more are then placed in front of the broad ligaments to attack the obturator glands. The ends of the ligatures are tied together and pushed into the pouch of Douglas. After seven days the abdomen is reopened and the needles removed. The second laparotomy is regrettable but is justified by the necessity for fixing the needles in position and the risk of doing damage by pulling them out blindly.

At the Marie Curie Hospital, administered by a group of medical women, a modified Stockholm technique is used. Flat applicators are used instead of cylindrical, as they are thought to give better radiation. Two radium tubes containing 30 mg. radium element and 20 mg. respectively are placed in tandem in the uterine cavity and two or three flat applicators, each containing 25 mg., are put in the vaginal vault. These are left in for 22 hours and the treatment is repeated after a week and again after another two weeks. For cancer of the body 75 mg. are placed within the uterus, and the vaginal applicators are only used at the first two treatments. While this is the routine, every case is considered individually; older patients have smaller doses and the number and position of the vaginal applicators varies with the size of the vagina and the extent of the growth. If the growth shows no response to the three treatments, further application has been found useless and hysterectomy is advised. The only contra-indications were serious pelvic or general infection and advanced cachexia with distant metastases; only 8 out of 274 cases were refused radiotherapy. Even severe anæmia does not forbid radium, but it is well to take every means available for improving the general condition. The report of the Marie Curie Clinic has been published separately[3] and includes a full description of the technique and results, together with a review and discussion of the principal methods in use for radiotherapy of cancer of the uterus.

University College Hospital[4] reports that it is impossible to differentiate between the local sequelæ of radium treatment and the normal ravages of malignant disease. These sequelæ include persistent pyrexia, pyometra, pelvic abscess and peritonitis, fistulation, dissemination of the growth and stenosis, and shortening of the vagina. Workers at the Royal Infirmary, Cardiff, found that fistulæ occurred in 10 per cent. of cases, and do not think that the incidence and circumstances justify attributing any blame to the radiotherapy. They recommend inserting a self-retaining catheter and firm anterior and posterior vaginal packing.

Cancer of the Mouth, Pharynx, Larynx, and Œsophagus.

There is still much difference of opinion as to the best way of treating cervical glands. Block dissection, dissection and insertion of radium needles, and the radium collar all give bad results in many cases. St. Bartholomew's Hospital prefers the insertion of radium needles alone. Birmingham prefers irradiation from a collar containing 70–80 mg. of radium in 5 mg. tubes for 8–24 days, producing a well-marked erythema. Dublin tried intravenous injections of selenide of lead after radiotherapy and regards this as a sound prophylactic measure. Growths in the upper air passages show remarkably different reactions to radium; those of the skin of the nasal vestibule and of the fauces disseminate rapidly and fatally. The technique adopted at St. Bartholomew's Hospital for cancer of the larynx is to expose and fenestrate the thyroid cartilage and to lay needles, screened by 0·5 mm. of platinum, directly on its surface. As the Birmingham report observes, the region is second in difficulty only to the œsophagus; radium is indicated for growths spreading to the opposite cord or running round the larynx. Œsophageal growths are examined, measured and drawn through the œsophagoscope and a piece is taken for microscopy. Radon seeds are introduced by means of a trocar and cannula and placed as far as possible at regular intervals in directions downwards and outwards at a distance of one centimetre. The immediate results have been excellent.

Cancer of the Rectum and Bladder.

St. Bartholomew's Hospital started last year to treat carcinoma of the rectum by needling through the abdomen as a preliminary to excision or to radiation from below. Further, radon seeds have been directly implanted into the growth per rectum. Radon seeds have the advantage that they can be left in situ, but it remains to be seen whether they are as effective as needles. Birmingham irradiates round the growth per rectum and inserts needles into the peri-rectal tissue with trocar and cannula, the average dose being 5400 milligramme-hours. King's College Hospital treated 30 inoperable cases by insertion of radium into the lumen of the bowel. Varying reactions were obtained; in some cases there was radio-necrosis, while in others the effect was inappreciable although the dose was the same.

St. Peter's Hospital treats cancer of the bladder either by inserting 10 mg. platinum needles 0·5 mm. thick into the periphery of the tumour outside and inside the bladder (ulcerative growths) or buried in its base (cauliflower type), or else by burning away as much of the growth as possible by diathermy at open operation and then inserting the needles into the wall around the base of implantation.

Sarcomata and Lympho-sarcomata.

The sarcomata have usually been treated by the insertion of radium, but it is not yet possible to say whether they are best treated by large intensities for a short time or by small intensities for a long time. Reports correlating therapeutic results and histological investigations have been received from the Middlesex Hospital, University College Hospital, Birmingham, Cardiff, Aberdeen,[5] and Dublin. On the whole sarcomata appear to offer a good field for radium therapy. Lympho-sarcomata, though highly sensitive to radium, have a great tendency to become disseminated, and some authorities think the dissemination is accelerated by irradiation. The results are not satisfactory.

Although figures are given in each section of the report, it is obvious that the time for attaching importance to statistical results is not yet. The Committee sound a warning against the use of radium by any medically qualified person irrespective of special training or experience in radiotherapy. The report points out that the superficial application of radium and even its insertion into the body constitute only a very small part of radium therapy, and urges the importance of taking steps to fit more men and women for this highly specialised type of work.

[3] H. K. Lewis and Co., Ltd. 1929. Pp. 37. 2*s*. 6*d*.

[4] Full report published separately.

MEDICINE AND THE LAW.

Osteopathic Treatment Censured at Inquest.

TREATMENT given by an osteopath was censured by a coroner's jury at a recent Southend inquest. The deceased, aged 72, had (according to his son's evidence) had a rupture four years ago; he refused the advice of four medical practitioners that a truss would be satisfactory and he followed for eight months the osteopath's prescribed treatment of manipulation, diet, and exercise. As there had not been attendance by a registered medical practitioner his death could not be the subject of a medical certificate. A post-mortem examination was conducted by Sir Bernard Spilsbury in the presence of the coroner and the osteopath. Sir Bernard at the inquest described the body as emaciated, the flesh sunken, and the ribs prominent; internally there was an almost complete absence of fat; acute pleurisy and pneumonia were

[5] The Sixth Annual Report of the Harker-Smith Registrar University Press, Aberdeen.

present in the right lung; the cause of death was syncope due to acute pneumonia and accelerated by insufficient food. Sir Bernard added that there was no disease which would account for the emaciated condition; the diet represented on the diet sheets (some of which were produced in court) would be quite inadequate to maintain the strength of any individual. On behalf of the osteopath it was represented that the idea of osteopathy was to reduce the diet and allow the body to get rid of poison; a grateful letter from the deceased to the osteopath was read and it was stated that the latter had treated hundreds of patients in Westcliff without fatal results until the present case. The osteopath, giving evidence, described himself as an "osteopath and nature practitioner"; he said that the deceased had a normal appetite and continually over-ate. Though taking a serious view of the evidence, the coroner did not put the case to the jury as one of criminal negiect; the jury returned a verdict in accordance with the medical evidence.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Medical Life of Clemenceau.

FEW, even in France, know what a part medicine played in the life of the "Tiger." His father, Benjamin Clemenceau, was a physician at Nantes who made only occasional excursions into politics, but one of these led to his deportation in 1858 at the hands of the Second Empire. Georges Clemenceau, who was 17 when this happened, began his medical studies at Nantes, where he was *interne* at the local hospital, and continued them in Paris as *interne provisoire*. He mixed politics with medicine at once, and was sent to prison in 1862. Three years later he was admitted doctor with a thesis on the Generation of Anatomic Elements, which (truth compels us to say) was neither worse nor better than the average of its kind. No sooner had he obtained his diploma than he set out for England, and later went to the United States, where he earned his living by teaching French. Returning just in time for the war of 1870, he again combined politics with medical practice at Montmartre, but soon gave up the latter for journalism, never to return. In memory of his early days the Association of Medical Veterans of the Front participated officially in the homage paid at the Arc de Triomphe.

A Diploma of Major Surgery.

Since the war many doctors perfectly unqualified by their previous training have blossomed into the practise of major surgery—a phenomenon not, I suppose, strictly confined to this country. This state of things is the reason why Dr. Quénu, professor of surgery in the University of Paris and President of the Academy of Medicine, proposed to urge the Government to create a compulsory diploma for major interventions. Most of his surgical colleagues backed him, and the resolution was on the point of being put when Prof. Hayem, one of the oldest members, asked for a fortnight's postponement. The resumed debate was more animated than is customary in that somewhat august assembly. The internists and pathologists opposed a compulsory diploma, and Prof. Hayem suggested a compromise in the form of an optional diploma, such as exists already in such specialties as forensic medicine, hygiene, and radiology. It may seem queer to you that an apparently simple formality should have given rise to passionate discussion. I need only recall the fact that in my country doctors have always maintained that the diploma of the faculty, delivered with the imprimatur of the State, entitles them to any and every professional act necessary for the welfare of the patient. Prof Vaquez, who led the attack, argued that it was flatly impossible to draw the line between minor and major surgery. A non-entitled physician might incise a whitlow—no one denies him the right to do that—which next day became a diffused phlegmon. It could never be proved that at the time he operated it was not yet a task for the special surgeon. As a result the physician unwilling to take such a risk would temporise, and the patient would come too late into the care of the surgeon. Prof. Balthazard, the forensic expert, remarked that if a diploma were created for surgery every specialist in gynæcology, urology, oto-rhino-laryngology, or what not would ask for one. We should then see unsatisfied patients summoning their surgeon to court for having gone outside his special field by opening an acute mastoid or draining an urgent pelvic abscess. Prof. Sergent slily suggested that a higher certificate as *interniste* would not be wasted on the surgeon, who was in many circumstances a greater danger from his medical diagnosis than from his surgical work. The debate ended with the unanimous recommendation to create a free certificate, the surgeons accepting this in preference to getting nothing at all.

A medal designed by the lately dead artist Bourdelle has been presented to Dr. Leopold-Lævi by his friends and disciples. Although holding no official position, Dr. Leopold-Lévi has made for himself—what is rather rare in France—a place on the scientific side of medicine. He is regarded as the first authority on endocrinology.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Poisoning with Nitric Acid Fumes.

IN a factory near Bucharest the firemen were called to put out a fire due to the breakage of a case containing bottles of nitric acid. The acid was concentrated and contained no undue proportion of nitrous acid and no sulphur impurities. The sawdust in the packing became soaked with the acid and burst into flames in many places. When the firemen arrived they found a thick pungent smoke which caused an intense but transient sensation of irritation in the respiratory passages. They were taken to hospital, but were discharged at their own request after a few hours. All three, however, were brought back to the hospital on the same day; they vomited, complained of sharp pain, and quickly developed pleurisy and broncho-pneumonia. The general symptoms resembled those noted after the inhalation of chlorine or other irritant gases. One of the three cases proved fatal, two recovered.

Hard Work and Aortic Disease.

The medical inspector of the Port of Galatz, in his quarterly report, states that many of the labourers who work about the docks at Galatz suffer from heart disease. They are not especially liable to rheumatism; indeed, a history of acute rheumatism is unusual, though many complain of the vague pains commonly called chronic rheumatism. The pains are generally held to be nervous in character or myalgic. They are all truckers, that is, men who do heavy lifting around the docks, and their heart disease is attributed to strain. It is thought to be of traumatic origin rather than the result of spreading arterio-sclerosis.

TORBAY HOSPITAL CONTRIBUTORY SCHEME.—This scheme came into operation on March 25th last, and has already produced a total of £2353. Down to Oct. 31st, 251 members and 23 children of members had been treated as in-patients. The average stay of the in-patients was 22 days, and their average cost £9 6*s*.

A MENTAL HOSPITAL ASSESSMENT.—Before the recent revaluation the net assessment of the Cardiff Mental Hospital was £6000. It was then raised to £8925, and it is now to be further increased to £9200. Inquiries about the higher assessment of other mental hospitals show that whereas the Cardiff valuation of £8925 works out at £11 18*s*. per bed, the average of over twenty similar institutions is £5 3*s*. 9*d*. per bed. Notice of objection has been given.

Correspondence.

"Audi alteram partem."

USE OF THE TERM "GASTROPTOSIS."

To the Editor of THE LANCET.

SIR,—The leading article on the Significance of Visceroptosis in your issue of Nov. 16th prompts me to inquire whether the time has not arrived when some other term should be used instead of "gastroptosis"? The word "ptosis," when applied to any other of the abdominal viscera, such as the kidney or the colon, means the dropping down of that organ, but since the fundus of the stomach does not alter in its relation to the left dome of the diaphragm, it cannot be said that the stomach is dropped in the condition generally described as gastroptosis. In so-called gastroptosis the stomach is lengthened but not dropped. In view of the fact that a stomach that is longer than the average may be normal to some people, and that a long stomach is rarely responsible for symptoms provided there is no abnormality in its tone, peristalsis, and rate of emptying, the new word required should have a physiological rather than a pathological complexion.

I am, Sir, yours faithfully,

GEOFFREY EVANS.

Park-square East, London, N.W., Nov. 28th, 1929.

*** Diagrams illustrating the wide variations in length of normal stomach will be found on p. 1210.—ED. L.

CLINICS FOR RHEUMATIC CHILDREN.

To the Editor of THE LANCET.

SIR,—It is of the greatest importance, if we are to diminish the incidence of heart disease, that we should exercise strict supervision over every case of rheumatism in childhood. It may be contended that school clinics and school examinations by the official medical officers supply all that is necessary in this direction. Unfortunately, most school clinics are absolutely soulless affairs, while the routine examination of school-children has for its main object the after-compilation of reports with long tables of statistics, the only use of which is the manufacture by a Government department of a still more lengthy report with equally lengthy and still more elaborate statistics. Moreover, in the majority of cases, the school medical officers have little or no knowledge of children's diseases, as the chief qualification for such appointments is, curiously enough, the possession of a diploma in public health, not one in children's diseases. In addition they are, for the most part, newly qualified practitioners who have had little or no experience outside their hospital work. Is it to be wondered at, therefore, that school clinics and school medical officers are unsympathetic in their attitude towards the child, the parent, and the teacher? We need a change in all this, and the appointment to such posts of men who possess the necessary qualifications—and, if possible, of practitioners of the older school, well trained in the methods of handling patients and their relatives.

Little or no provision has been made in this country for dealing satisfactorily with the rheumatic child as a definite and distinct entity, and I most strongly and earnestly urge the establishment of clinics for rheumatic children in every large centre of population throughout the country. The objection that this would cost money, whereas in these days drastic economy is called for, raises the question of whether these clinics should be under private or State or civic control. Now we know what State control means. We have only to look at the "panel" system, with all its useless "red-tapeism," to see what State control of health matters means; and, again, we have merely to reflect how child welfare centres are usually managed under civic control to be impressed with the superiority of private and absolutely independent enterprise over State or civic control. I therefore advocate private clinics for the welfare of rheumatic children and, moreover, these should preferably be linked up with general clinics for sick children. If controlled by private enterprise, such clinics need not be at all costly. A hall can usually be obtained free, or at a small rental, while heating, lighting, and attendance need not cost much. Freed from unnecessary red-tape, the clinics could be run at very little expense. Doubtless in some cases they could be fathered by some philanthropic member of the community. The clinic should be part of a general clinic for sick children, as it would be in such a clinic that we could detect those causes predisposing to the rheumatic infection in the child. Otherwise the special clinic would be lacking in the provision of prophylactic measures, which are of the highest importance in this disease. While, therefore, the special clinic would, in the first instance at least, form part and parcel of the general clinic, it would become entirely distinct from it when questions of actual treatment and supervision came to be dealt with.

The functions of clinics for rheumatic children are three in number: prevention, treatment, and supervision.

Prevention.—Prophylaxis of disease is always a most important matter for consideration. Here, then, we have to attend to such matters as teeth, tonsils, and nose, as well as to feeding, housing, clothing, and foot-gear. It is in the general rather than in the special clinic that such matters as tonsillitis, nasal infections, unsuitable and deficient diet, insanitary surroundings, clothing and the like can most conveniently be dealt with. It is here, too, that "growing pains" can be detected quite readily, and their importance brought to the notice of the parents. All this preventive work can only be appropriately dealt with in a general clinic. Cases found to be actually affected with rheumatism, its complications or sequelæ, must be referred to the department of the clinic specially devoted to such matters.

Treatment.—This will include many of the prophylactic measures already referred to, such as diet, housing, clothing, and attention to teeth and tonsils, as well as the prescription of drugs and suitable exercises. But it is not sufficient to give directions as to treatment; it is absolutely essential to see whether they are carried out. For this purpose a staff of voluntary workers will be necessary, preferably women chosen for their sound common-sense rather than for their elementary knowledge of medical matters. A little learning is always a dangerous thing, and it becomes all the more dangerous in the treatment of disease. The voluntary worker must first of all be loyal to the directions given by the physician in charge of the clinic; she must never on any account express her own views as to treatment.

Supervision is by no means the least important function. It must be applied to work and play, to home and school life. All this requires constant care and watchfulness. It means coöperation with parent and teacher. It opens up the vast questions of school hours, home-lessons, school games, gymnastics, the finding of suitable occupations, and many other details which must be attended to with the greatest care in dealing with rheumatic children.

Thus the work of such clinics is by no means superficial, and their efficiency will depend on a variety of factors. Some of these we may enumerate as follows: (1) An experienced physician must be in charge, and he must be assisted by a good staff of voluntary workers. (2) There must be close coöperation between the clinic and parents and school-teachers. (3) The clinic must not be hampered by any red-tape system in which statistical records take precedence of the real work.

The term "rheumatic clinic" is, at the best, ambiguous, and I suggest, therefore, the fuller and better title: "clinic for rheumatic children." Perhaps my remarks are somewhat premature, but I venture to predict that such clinics are bound to find a place sooner or later in the domain of public health service. They are sure to be productive of much good, not only to the individual, but to the community at large.

I am, Sir, yours faithfully,

JAMES BURNET, F.R.C.P. Edin.

Edinburgh, Nov. 30th, 1929.

IRRADIATED MILK *v.* COD-LIVER OIL FOR RICKETS.

To the Editor of THE LANCET.

SIR,—The interesting communication by Miss K. H. Coward, D.Sc., on the Value of Irradiated Milk compared with Cod-liver Oil as a Source of Vitamin D (THE LANCET, Nov. 23rd, p. 1090), prompts me to comment. While Dr. Coward refrains from drawing any conclusion of direct clinical application from her results, it is clear that two conclusions might reasonably be drawn from her statement by clinicians or others. One conclusion—favourable to irradiated milk—is the possible advantage of adequately irradiated milk over cod-liver oil in the case of very young infants, where, in not a few instances, difficulty is experienced in the administration of even 10 drops of a "good average oil" regarded by her as equivalent in clinical value to a pint of "the weakest sample of irradiated milk." The other conclusion—less favourable to irradiated milk—is that in so far as "weight for weight a good sample of oil contains from 50 to 1000 times as much antirachitic vitamin as current samples of irradiated milk," the practical value of irradiated milk for older children or adults is slight. Dr. Coward herself may not accept this conclusion; in any event it is advisable to point out reasons for its rejection.

For the past nine months I have been investigating the clinical effects of irradiated milk in the treatment of rickets, in order to confirm or refute the remarkable results claimed from its use by German investigators. The results of a first series of investigations (published in your issue of Oct. 5th) confirmed the claims of the German authorities for the therapeutic value of irradiated milk in the treatment of rickets. I had an open mind as to whether any benefit that might accrue from the irradiation could be correctly ascribed to vitamin D, and the facts recorded by Dr. Coward justify my hesitancy. If the foundation of the test is not entirely accurate—in other words, if the present conception of vitamin D is not the whole truth—great caution is necessary in appraising its results. Dr. Coward found that the sample of irradiated milk I sent to her laboratory showed the presence of "antirachitic vitamins" to the extent of 0·1 unit per gramme—the lowest content recorded, but this very feeble vitamin D milk yielded the remarkable clinical results recorded in our paper and is still continuing to do so. In view of the great potency of this milk in rickets, it is a matter of interesting speculation as to what would have resulted from the use of the richest vitamin D milk 20 times stronger.

In our paper these anomalous findings were kept in view and were referred to in the statement "with fuller knowledge time may show that these tests may require modification"—the tests referred to being the line test employed by the Pharmaceutical Society, and the ostelin units per gramme test as described by Jephcott and Bacharach. Dr. Coward's clinical record confirms the view put forward tentatively in our paper.

I am, Sir, yours faithfully,
CHALMERS WATSON, M.D.

Edinburgh, Nov. 29th, 1929.

To the Editor of THE LANCET.

SIR,—I have been somewhat astonished that Dr. Coward's sweeping generalisation on the absence of vitamin D from cow's milk should be accepted without demur. On the findings of an unknown number of tests by a method which is not described, on a series of milk samples of undescribed source, Dr. Coward comes to a conclusion of far-reaching importance. These results are quite opposed to the summary of recent work on vitamin D and milk which lately appeared in the editorial columns of the *Journal of the American Medical Association* (vol.xciii., p. 1386). There Sherman and Striebling's researches are quoted demonstrating that, in a diet otherwise free from vitamin D, from 5–10 per cent. of the calories coming from a whole-milk powder carried sufficient vitamin D for normal growth and calcification. I should be grateful if Dr. Coward can be persuaded to amplify the data of those investigations on which her important conclusion is based.

I am, Sir, yours faithfully,
Bristol, Dec. 2nd, 1929. FRANK BODMAN.

THE CRAFT OF SURGERY.

To the Editor of THE LANCET.

SIR,—Prof. Tonks has called attention to a serious deficiency in the training of our surgeons. In the days of Jonathan Hutchinson and Frederick Treves, when I qualified, we did not lack material or the teaching of diagnosis; text-book "cram" then, as now, was a necessity, marks had to be obtained on the written part of the examinations, and the best memory got the most marks, the craft of surgery in its endless detail was not taught then any more than it is now. Since 1887 I have been, until two years ago, on the surgical staff of county hospitals. I have seen the work of a multitude of house surgeons, and I look back with something like terror at my own early want of knowledge of surgical craft, and the like ignorance of my residents.

Fellows, masters, or bachelors of surgery in their early days are no better craftsmen than the pass man. If we are carpenter, musician, or art student we show manipulative dexterity, not because of our medical training, but in spite of it. How many surgeons within six months of qualifying could give the many directions to cut a special splint in wood or metal? How many men, as Mr. Rocyn Jones inquires, can use a chisel or saw? The use of a needle or thread in the hands of the average young man is a travesty in stitching; the application of pressure forceps guarantees in many cases the necrosis of an area round a blood-vessel.

Young men and women are full of technical knowledge and theory, but a practical knowledge of surgical craft is almost negligible. Prof. Tonks, a demonstrator of anatomy and a well-known artist, tells us that as a F.R.C.S. he was not taught the craft of surgery; he may never have done an operation, although holding the highest qualification. I was in the ranks of surgery, and I had to learn my craft after examiners had finished with me. In all humility I submit that Fellows are in the like position. Most of us owe our position on the staff of county hospitals to the goodwill of a lay committee, not because we are craftsmen. We may learn it by practice but we have no technical training.—I am, Sir, yours faithfully,

Tunbridge Wells, Nov. 28th, 1929. W. B. COSENS.

AVERTIN ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—I should much have liked to have been present at the discussion on avertin anæsthesia which was recently held at the Royal Society of Medicine (THE LANCET, Nov. 9th, p. 978), and to have given my experience of the drug which now runs into hundreds of cases. I have used it in every type of surgical case from operations on the skull and its contents down to amputations, and I shall continue to use it owing to properties which are a genuine delight to both patient and surgeon.

The contra-indications of avertin anæsthesia are few and limited to kidney disease and low blood pressures. The only drawback is that certain patients are noisy, perhaps a little restless, when the effect of the drug is wearing off. Only in exceptional cases can avertin by itself be said to give complete anæsthesia. Its great use is in combination with other drugs, which in themselves are insufficient. Thus an absolutely non-toxic pleasant and totally efficient combination can be obtained, which is the ideal.

In children, avertin is used in combination either with infiltration anæsthesia (½ per cent. novocain in 1/200,000 solution of adrenalin hydrochloride) or with a very minute dose of ether, on an open mask. No preliminary morphia should be given to children under 14 years. In older people, morphia gr. 1/6 is given hypodermically half an hour beforehand. Avertin in adults can be combined with spinal anæsthesia, and this has been the ideal combination for the more difficult abdominal operations such as partial gastrectomy, cholecystectomy, resection of growth of the colon, and so forth. Here the avertin must be given three to five minutes before giving the spinal injection, otherwise the latter relaxes the sphincter ani, and part of the former drug is voided, spoiling the effect of the combination. For other operations in adults its use with infiltration anæsthesia as for children forms an ideal combination for operations on the breast, thyroid, hernia, and so forth.

Avertin (except in cases of kidney trouble or low blood pressure) has the following great advantages:—

(1) It is, in my experience, non-toxic and absolutely harmless.

(2) It is quick in its action; the patients are asleep in from three to five minutes after administration.

(3) In the greater majority of the cases it provides refreshing sleep for several hours after operation.

(4) It has a beneficial psychological action, for it has banished the dread of the anæsthetic mask and the surroundings of the operating theatre. This is a great factor in children.

(5) It can be administered by a nurse, although an anæsthetist should be present.

In conclusion, I emphasise three precautions. The tendency of the jaw to slip backward and produce a degree of cyanosis should be avoided by keeping the head low and on its side. The drug should always be tested with congo red before use. A dose of 0·1 g. per kilo of body-weight should be given.

I am, Sir, yours faithfully,

Bradford, Nov. 29th, 1929. BASIL HUGHES.

THE PURCHASE OF DANGEROUS DRUGS.

To the Editor of THE LANCET.

SIR,—In my innocence I thought that since the Dangerous Drugs Acts came into force the opium-taker could not purchase his dope unless he did so in a surreptitious way. Yesterday a case came under my care which showed me that an opium-fiend can buy just as much as he wants from any chemist who will sell it, provided that it is diluted sufficiently to come outside the Act, and also that the chemist has no need to enter such sale in his poison book. The woman was taken acutely ill with a septic condition, and it was found she had many 6 and 8 oz. bottles labelled "Laudanum, dil. 1 in 8." Her husband, a labourer on less than £3 a week, says she spent 15*s.* to 20*s.* a week on the stuff. But the most terrible part of the business came out later at night. A six-year-old grandchild she was bringing up began screaming for "her drops from grannie,"—did so all night. I inquired of the police if any action could be taken. They thought not. In fact they had in their possession a confession by the woman of her having given opium to an elder child now in a reformatory.

Cannot this evasion, which nullifies all the intentions of the Act, be brought to the notice of the proper authorities?—I am, Sir, yours faithfully,

Scunthorpe, Lincs., Nov., 29th, 1929. W. S. HALL.

CONTRACTILITY OF CAPILLARIES.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 9th (p. 1010) Dr. J. F. Fulton makes a valuable addition to our knowledge by revealing James Black's Description of Contractility of Capillaries (1825). Dr. Fulton mentions that neither Krogh, in the second edition of his monograph, nor Lewis, cites the interesting study by James Black. So far as Krogh's book on capillaries is concerned (2nd edition, p. 2), he distinctly states his work is not a monograph, and that he does not aim at a complete presentation of the literature of the subject. As a worker in the same field, I should certainly agree that the literature of the subject is not completely or even adequately presented by Krogh.

For example, the first published description of direct microscopic observation of the circulation going on in the glomerular arteries and capillaries, and the first published description of direct microscopic observation of the circulation going on in the capillaries, &c., of the liver, are both omitted from the text, and from the bibliography of Krogh's book. This is unfortunate, but as long as p. 2 of Krogh's volume is retained, there is no one responsible. On the other hand, if Krogh's volume is looked upon as an exhaustive monograph, then my colleague Leonard Hill, who is the author of the first of these discoveries, and myself, who am the author of the second, had better resign ourselves to the fate of James Black, although one never knows what might turn up in kindly obituary notices.

I am, Sir, yours faithfully,

JAMES M. MCQUEEN.

Halesowen, Worcester, Nov. 27th, 1929.

DIAGNOSIS OF GASTRIC DISEASE.

To the Editor of THE LANCET.

SIR,—Dr. Rowden's letter misrepresents my statement and my views. He bases his remarks on a very condensed version of what I said at the conclusion of a discussion; if he will refer to the fuller, but necessarily abridged, account of my opening remarks at the same discussion (THE LANCET, Nov. 16th, p. 1041) he will see that he might well have saved himself the trouble of writing. During the course of the discussion one speaker described a case of anæmia, anorexia, and fever, which was finally diagnosed at a clinic as one of gastric carcinoma. In my reply I merely pointed out that anæmia, anorexia, and fever were three well-recognised clinical symptoms of gastric carcinoma; it must be obvious to anyone that they are symptoms of the disease in an advanced stage. I agree with Dr. Rowden about the importance of careful study of dyspepsias at or after middle life, but it should also be appreciated that a considerable proportion of all cases of gastric carcinoma are already advanced before symptoms appear or the patients think it necessary to seek medical advice. Finally, there are plenty of functional dyspepsias after the age of 35 which may be recognised and classified clinically, and in which it is quite unnecessary to subject the patient to the trouble and expense of an X ray examination.

I am, Sir, yours faithfully,

London, Nov. 31st, 1929. J. A. RYLE.

G.M.C. ELECTION.

To the Editor of THE LANCET.

SIR,—As an independent candidate, I desire to thank all those practitioners who kindly voted for me in the recent election of Direct Representatives on the General Medical Council. Though not elected, I consider the result (2019) to have been very encouraging.

I am, Sir, yours faithfully,

Dec. 2nd, 1929. ARTHUR HAYDON, M.D., F.R.G.S.

ROYAL MEDICAL BENEVOLENT FUND.

To the Editor of THE LANCET.

SIR,—The sum of £43 has been received up to the end of November for Christmas gifts in response to Sir Thomas Barlow's appeal published on Nov. 22nd. The subscriptions have been received from the following: Anonymous (Edinburgh), Dr. H. E.

Bloxsome, Dr. G. M. Bluett, Mr. W. C. Bull, Dr. W. J. Dixon, Mr. H. A. T. Fairbank, Dr. J. Fawcett, Dr. J. C. M. Given, Sir Charles Gordon-Watson, Dr. N. G. Horner, Dr. J. Hudson, Dr. R. G. MacGowan, Dr. J. C. Maddison, Dr. D. D. Malpas, Mr. W. M. Mollison, Mr. W. S. Thacker Neville, Mr. H. T. Nixon, Dr. J. Orr, Sir R. W. Philip, Dr. C. F. J. Smith, Surg.-Lieut. L. D. Spero, Dr. W. B. Tomson, and Dr. J. Walker.

The amount of money required for Christmas gifts is £500, so that further donations are very urgently required, and should be sent to: The Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos-street, W. 1.

I am, Sir, yours faithfully,

E. C. PENNEFATHER,
Secretary.

Dec. 3rd, 1929.

ELECTRICAL TREATMENTS IN ACUTE CONDITIONS.

To the Editor of THE LANCET.

SIR,—I did not see Dr. Bauwen's letter in your issue of Nov. 16th, with its stimulating criticism, until some days after publication, or I would have written sooner to say how entirely I am in agreement with him on the need for "electro-therapeutists expressing their thoughts in recognised technical terms." I have read through the paragraphs in my original article to which he takes exception, and in so far as I have transgressed in not "expressing my thoughts in recognised technical terms," I must cry *peccavi*. As an offender in the matter of rules that I consider should be observed, the only extenuating circumstances that I can plead are that the lecture was addressed to students, and looseness in technical expression tends to creep in when one so well knows that many electrical terms convey little or nothing to them.—I am, Sir, yours faithfully,

C. B. HEALD.

Park-crescent, Portland-place, W., Dec. 3rd, 1929.

A WHITE BLACK-BOARD FOR THE OPERATING THEATRE.

To the Editor of THE LANCET.

SIR,—Every surgeon in a teaching hospital, either just before an operation or even during its performance, must on occasion have wished to draw a diagram—a wish denied his gloved hand by the rule of asepsis. In my own theatre I have met this recurring need for surgical illustration in a simple way, and I can now go at any time to a board hung as a fixture on the wall and draw or write upon it without breaking the aseptic routine of operation. Chalk dust is undesirable, and I use the soft crayons, made on a grease basis, which are sold for children in every stationer's shop. These crayons require a white surface, which was got by painting an ordinary black-board with white enamel paint. The board is convenient to the operating table and in easy view of the students' gallery. The crayons stand, point downwards, in a metal rack like that employed for tubes in the Wassermann test. The required crayon is grasped with long, sterile sponge forceps, which are fenestrated. Six will hold the traditional colours of anatomical diagram. The crayons are best used short—a stub does not break off. Crayon marks can at once be effaced by an attendant with a swab moistened with ether. This, in time, removes a thin film of paint, but so thin that after two years my board remains clean, white, and attractive.

I am, Sir, yours faithfully,

ARNOLD K. HENRY.

Faculty of Medicine, Cairo, Nov. 13th, 1929

ABERGAVENNY COTTAGE HOSPITAL.—Lady Mary Herbert last week laid the foundation-stone of a new wing which will include a maternity ward. This will be the third enlargement since the hospital was built in 1901; as a dispensary it has existed since 1828.

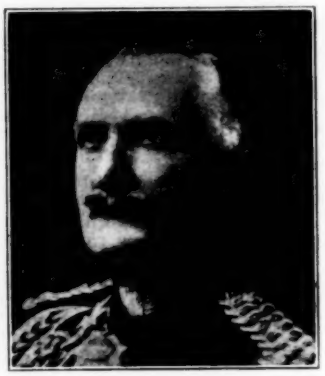
Obituary.

SIR ARTHUR SLOGGETT, K.C.M.G., K.C.V.O., F.R.C.S. ENG.,

LATE DIRECTOR-GENERAL OF MEDICAL SERVICES.

THE death of Lieut.-General Sir Arthur Sloggett, Director-General of Medical Services in France during the late war, and Chief Commissioner of the Red Cross (briefly announced in our last issue), occurred suddenly on Nov. 27th, just after he had reached his seventy-second birthday.

Arthur Sloggett, the son of the late Inspector-General W. H. Sloggett, of Paignton, by his wife Elizabeth, daughter of Thomas Crossing, J.P., of Stoke Damerel, was born at Stoke Damerel, Devon, and received his education at King's College, later joining the medical school of King's College Hospital. He obtained the qualifications of M.R.C.S.Eng., L.R.C.P. Edin. in 1886, immediately after which he entered the medical branch of the army. From that time forward he was constantly on active service, and as long ago as 1896 became a marked man when, being senior medical officer on the expedition to Dongola, he was mentioned in despatches, promoted to Surgeon Lieut.-Colonel, and received two Egyptian decorations. Two years later he was the senior medical officer of the first brigade of the British division in the Nile Expedition, and at the Battle of Khartoum was shot through the chest, an injury from which he made a remarkable recovery—he is said to have accounted for the fortunate issue by explaining that "his heart was in his boots." Further mentions in despatches, promotions, and decorations followed. In the South African War he was placed in charge of the Imperial Yeomanry Hospital, being later P.M.O. at one of the general hospitals. He played a prominent part in all the operations of that prolonged struggle, was again mentioned in despatches, decorated, and received the C.M.G. In 1903 he was the P.M.O. to the Home and London districts, an appointment which he held for five years, when he became P.M.O. to the Bombay Presidency. In 1911 he was promoted to be Director of Medical Services in India, and received the C.B.



SIR ARTHUR SLOGGETT.
[*Photograph by Elliott and Fry.*

Sloggett had been called home to succeed as Director-General Army Medical Services three months before the war broke out, and in September, 1914, he was appointed Director-General of the British Armies in the Field, as well as Chief Commissioner of the British Red Cross and the Order of St. John. As all know, he discharged his onerous duties with vigour and conscientiousness. In the late Sir William Macpherson's "General History of the Medical Services in the War," which is based on official documents, it is stated that the scheme, whose duality was criticised, worked admirably throughout the war, its success being essentially due to the fact that the regular organisation of the Army Medical Services was no longer subject to the conflicting interests and rivalries of voluntary aid organisations. What really emerged was the fitness of a man of Sloggett's attributes—of his tact, good temper, and energy—

for a difficult post, carrying responsibilities that might easily have become mutually antagonistic.

In June, 1918, Sloggett's term of office ended, and there was considerable difference of opinion as to whether it should be extended in recognition of the way in which he had met his duties. Representations to this effect were made in several quarters but were unavailing, and Sir Arthur Sloggett was succeeded in the ordinary course by Lieut.-General Sir John Goodwin, the present Governor of Queensland. Sloggett made for himself a great name by the way in which he discharged for more than three and a half years his far-reaching commitments, his success being made possible alike by his 30 years of official experience and his innate qualities of sympathy and geniality.

Sir Arthur Sloggett's honours were many. He received the C.M.G. nearly forty years ago, was made C.B. in 1910, was knighted in 1914, and in 1917 was promoted K.C.M.G., and created K.C.V.O. He was also a Grand Officer of the Legion of Honour, a Commander of the Order of Leopold (First Class), and held the Croix de Guerre both of France and Belgium. He was surgeon to His Majesty the King. He married in 1881 Helen, daughter of Mr. J. R. Boyson, formerly Solicitor-General of Madras, and had one son, Lieut.-Colonel A. J. H. Sloggett, D.S.O., late of the Rifle Brigade, and two daughters, who married respectively Lieut.-Colonel Llewelyn Evans, C.M.G., D.S.O., and Major J. T. Duffin, M.C. Sir Arthur Sloggett died suddenly while walking in Regent's Park, London, with his son.

SIR JOHN ALEXANDER COCKBURN, K.C.M.G., M.D. LOND. & ADEL, M.R.C.S. ENG.

Sir John Cockburn, who died on Nov. 26th in King's College Hospital, was a prominent figure in the politics of South Australia for forty years.

John Alexander Cockburn was a Scot who came to Cholmeley School, Highgate, and King's College, London, for his education, taking the medical course at King's College Hospital. He qualified in 1871 as M.R.C.S., graduated M.B. in the University of London two years later, and in the following year proceeded to the M.D., being awarded the Gold Medal. In 1876 he migrated to South Australia and two years later became mayor of the town in which he elected to settle, thus inaugurating a public career whose utility only ceased with his death. At the age of 38 he became Premier of South Australia and until his retirement from active politics in 1898 he was found discharging many duties in many political combinations. At no time did his medical education and training seem to play much part in his political activities, though he held the portfolio of Education on more than one occasion, and made useful contributions to debates on public health and economics; he will be remembered in Commonwealth administration by his work in respect of the taxation of land and the extension of suffrage.

In 1898 he became Agent-General, and from that time forward was a familiar figure alike in social and business circles. He represented the Commonwealth at numerous important, international congresses, dealing with public health, infant welfare, national insurance, and other economic problems; he became president of the Men's International Alliance for Woman Suffrage, of the Entente Cordiale Society, the International Philological Society, and the Society for Masonic Study; he was for 17 years chairman of the Swanley Horticultural College, on the council and vice-president of the London School of Economics, was President of the Child Study Society, and he did prominent work for the London County Council in respect of elementary education. He was created K.C.M.G. in 1900.

This brief record of a busy life shows that the medical profession had reason to be proud of their colleague as a citizen valuable to his generation.

ARTHUR TEMPLER DAVIES, M.D. CAMB., F.R.C.P. LOND.

THE death of Dr. Arthur Davies at the age of 71 leaves us poorer of a sound practical physician with a charming personality. Arthur Templer Davies was the son of Dr. Herbert Davies, and grandson of Dr. Thomas Davies, both of whom lived in the City of London, and were on the staff of the London and City Road Hospitals; his father was also physician to the Bank of England, and the son followed very closely the family tradition. Born in Finsbury Square, he was educated at Charterhouse and Trinity College, Cambridge, where he took his tripos in 1880. He went on to St. Bartholomew's Hospital, qualifying in 1884, and holding office as house and casualty physician. Having taken the necessary medical qualifications, he joined the staff of the Metropolitan and City Road hospitals with which he remained associated for the greater part of his life. One of his main interests was tuberculosis, for which he found additional scope at the Royal Ventnor Hospital, but he never specialised in any narrow sense, and a breadth of knowledge fitted him for his work as physician to the Bank of England and to a number of life assurance offices. His publications also covered a wide field. He brought out an edition of his father's "Mechanism of the Circulation of the Blood," wrote on myxœdema and other dyscrasias, and delivered an oration to the Hunterian Society on Organotherapeutics, Ancient and Modern, which revealed wide study and clinical insight.

DR. A. T. DAVIES.

Dr. Davies was an original member of the Assurance Medical Society or, as it was at first called, the Life Assurance Medical Officers' Association. He took a keen interest in its work, and was successively a member of the council, secretary for four years, vice-president and president in 1916-17. His presidential address considered the heart and nervous system, in relation to the stresses of war, and, like all his contributions, was practical and to the point. "He was always," writes one of his colleagues, "modest in presenting his views, but they were invariably the result of careful thought and showed his wide practical knowledge and experience. His reports contained all essentials, and his decisions were clean-cut." During the war he acted as hon. physician to the Fishmonger's Hall Hospital for Officers.

Dr. A. G. Phear writes: "As one who was actively associated with Dr. Davies in the work of three hospitals, I should like to add a small tribute to his memory. Dr. Davies resided in the country, and after his retirement from active hospital work he was seldom seen by his friends in the metropolis, except at occasional committee meetings; he had, however, a great capacity for friendship, and an intense loyalty to his friends was a leading feature of his character. His friendships were of an enduring nature, and to

meet him again, even after a long period of absence, was to return at once to the old atmosphere of intimacy. His devotion to the hospitals he served so well was remarkable; he gave of his best to each of them; but his sympathies were, perhaps, specially identified by reason of family associations, with the Royal Chest Hospital in the City Road. In committee work his sound judgment and sane outlook were invaluable assets, and, as he was always ready to see the other side of the question, his considered opinion carried great weight with his colleagues. He was a great lover of plants: much of his leisure was spent in personal attention to his garden. Throughout the latter part of his life his outlook remained fresh, and he retained to the end a certain youthfulness of mind."

Dr. Davies married in 1889 Alicia, daughter of the Rev. Robert Irwin of Trinity College, Dublin, by whom he had a son and a daughter.

ARTHUR MERCER DAVIES, M.R.C.S., L.S.A., D P.H. CAMB.,

LIEUT.-COLONEL, R.A.M.C. (RETIRED).

WE regret to record the death of Lieut.-Colonel Arthur Mercer Davies which occurred on Oct. 25th at his house at Eltham in the 77th year of his age. Davies, who was the son of a clergyman, was born at Westminster and educated at Westminster School and Queen's College, Cork, whence he entered the medical school of Westminster Hospital. He was both a hard worker and a fine athlete. He took the double qualifications of M.R.C.S., L.S.A. in 1880 and immediately entered the Army. The country was involved in the Egyptian War shortly after Davies joined the R.A.M.C., and he saw much fighting in the Eastern Sudan and in the Nile Campaign. Then came a period of service in India where his interest in public health problems became prominent. In 1889 he took the diploma of D.P.H. Camb., obtained his majority in 1893, became Lieut.-Colonel in 1901, and retired seven years afterwards. From 1904 to 1908 he was professor of military hygiene at the Army Medical School, Netley, and was well qualified for this appointment since, during his period of service in India, he had done special official work both as bacteriologist and general sanitary officer. The appointment at Netley was confirmed at Millbank, and when he finally retired from the Army he obtained a post under the London County Council as an officer in the Public Health Department.

Colonel Davies was an accurate and fluent writer, the author of a popular handbook on hygiene, a treatise on the Food of the Soldier, and many official reports and contributions to the medical press on subjects connected with public health, military hygiene, and bacteriology. He was also for many years a valued member of the staff of THE LANCET. He leaves a widow, who is the daughter of Captain David Aird, R.N.

GEOFFREY LUCAS, B.A. CAMB., M.D. DURH., L.S.A.

Dr. Lucas, who died at Las Palmas on Nov. 26th after prolonged illness, was the youngest son of Arthur Lucas (of Hitchin) and was born at Darlington in 1875. He was educated at Durham and Tonbridge, entering Caius College, Cambridge, with an exhibition, taking the Natural Science Tripos in 1899 and demonstrating physiology in the University. Four years later he qualified from St. George's Hospital with the L.S.A. diploma and held house appointments at Westminster Hospital. He then spent two years at sea with the Orient Steam Navigation Company 1904-06 before settling down to practice at Ringwood, where he became medical officer of health to the Ringwood district. It was there that he became interested in the treatment of tuberculosis, which led him to take a resident post at the Banchory Sanatorium where he remained until 1921, with the exception of the period of the great war when he was at first physician to the 1st Scottish General Hospital and later held a commission at No. XI. Stationary Hospital B.E.F. On leaving Banchory he joined Dr. Vere Pearson at Mundesley Sanatorium until he retired last year after having made several more long voyages in search of health.

Dr. Pearson writes: "Dr. Lucas was a successful sanatorium doctor because he was genuinely fond of his work and because he was a sound general physician. A succession of patients were devoted to him because he was a man of parts, with wide interests, fond of fishing and shooting, and a good bridge player, but above all because they felt he always took an essentially sympathetic and wise interest in their welfare. He lived with his patients ordering the details of their living, understanding their foibles, and comprehending their difficulties. He was a quick worker, had an able brain, and was well versed in other branches of medicine besides tuberculosis. When during the war he practised as a general physician in the wards of the 1st Scottish General Hospital, Aberdeen, he did a certain amount of teaching as an assistant to Prof. Ashley Mackintosh. He would quickly grasp the gist of modern advances in medicine, and generally kept well abreast of these whether they were directly, or only indirectly, connected with the subject of pulmonary tuberculosis, which was, of course, the disease from which most of his patients suffered during the greater part of 20 years of his working life. By many of these he will be missed."

Dr. Lucas leaves a widow who with her two children has recently taken up residence in Australia.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 23RD, 1929.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 279 (last week 172); scarlet fever, 3673; diphtheria, 1692; enteric fever, 49; pneumonia, 1263; puerperal fever, 51; puerperal pyrexia, 116; cerebro-spinal fever, 10; acute poliomyelitis, 9; acute polio-encephalitis, 2; encephalitis lethargica, 19; dysentery, 10; ophthalmia neonatorum, 116. No case of cholera, plague, or typhus fever was notified during the week.

Of the small-pox cases 84 were reported from the County of London, as against 54 last week. These were distributed as follows: City of London, 1; Bermondsey, 2; Bethnal Green, 13; Camberwell, 16; Hackney, 5; Islington, Kensington, Lambeth, Lewisham, each 1; Poplar, 3; St. Pancras, 5; Shoreditch, 6; Southwark, 19; Stepney, 10.

The number of cases in the Infectious Hospitals of the Metropolitan Asylums Board on Nov. 26th–27th was as follows: Small-pox, 319 under treatment, 8 under observation (last week 240 and 17 respectively); scarlet fever, 2828; diphtheria, 2663; enteric fever, 89; measles, 367; whooping-cough, 109; puerperal fever, 32 (plus 14 babies); encephalitis lethargica, 125; poliomyelitis, 7; "other diseases," 16. At St. Margaret's Hospital there were 8 babies (plus 4 mothers) with ophthalmia neonatorum.

Deaths.—In the aggregate of great towns, including London, there was no death from small-pox, 5 (4) from enteric fever, 23 (4) from measles, 9 (2) from scarlet fever, 22 (1) from whooping-cough, 43 (8) from diphtheria, 76 (17) from diarrhœa and enteritis under two years, and 75 (10) from influenza. The figures in parentheses are those for London itself.

The single death from enteric fever outside London was reported from Acton. Diarrhœa accounted for 8 deaths at Liverpool and 6 each at Manchester and Salford. In Liverpool there were 5 deaths from diarrhœa and 4 from scarlet fever. Manchester and Wigan each reported 4 deaths from measles and West Ham 3.

There was no death from small-pox in the returns received from areas outside greater London, the county boroughs, and great towns for the month of October last.

The number of stillbirths notified during the week was 265 (corresponding to a rate of 42 per 1000 births), including 63 in London.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

CHILDREN AND YOUNG PERSONS (EMPLOYMENT AND PROTECTION) BILL.

In the House of Commons on Nov. 29th Mr. SORENSEN moved the second reading of this Bill. He said that there were hundreds of thousands of young persons working hours which he could only describe as perfectly abominable. This had an adverse effect on the health of the community, and of the young people in particular. There were still a number of young people and children who were adversely affected in industries which employed lead paint, and one of the clauses of this Bill prohibited entirely the employment of young persons in those concerns, except under very drastic conditions regarding apprentices. There was another clause in the Bill which dealt with the effect on young life of the lifting of weights that were altogether disproportionate to the size and strength of the young lads. The measure also protected young people employed in connexion with theatrical entertainment. The chief point of the Bill was that there should be no children under the age of 13 employed, except those who were lawfully employed when the measure came into operation. Between the ages of 13 and 16 the Bill provided that the total number of hours worked should be 38, or 8 hours per day. No child should work before the close of school each day. Between the ages of 16 and 18 the total number of hours worked should be 48, or 9 hours per day. Under the age of 18 there should be no Sunday work, and one half day per week should be guaranteed to the children and young people of the country. It was also provided that under the age of 16 no young person and no children should be employed in the coal-mines, and between 16 and 18 only those should be employed who had obtained a certificate of medical fitness.

Dr. MARION PHILLIPS seconded the motion for the second reading.

After some debate,

Mr. CLYNES (Home Secretary), said that the attitude of the Government towards the Bill was one of the completest goodwill and sympathy, but most of the ground covered by it had already been covered by Bills introduced by the Government, or Bills which they intended to introduce. He suggested that the purpose of the promoters might have been served by the debate that day, and that they should trust to the Government measures to which he now referred, and that this Bill might be withdrawn.

Dr. VERNON DAVIES said that the sympathy of all parties in the House was definitely with children and young persons, but those who had had experience of child workers or young workers in textile factories recognised that Mr. Sorensen in bringing in this Bill had taken on a colossal task and one which was really beyond the competence of any private Member. That task could only be adequately discharged by means of the large experience and sympathetic help of the Government. He welcomed the advice of the Home Secretary that the promoters should be satisfied with having raised the subject.

In reply to Mr. SORENSEN, Mr. CLYNES said that he could give an assurance that when the Government had disposed of their Factories Bill, which covered only those employed in factories, they were quite eager and ready to try to cover the remaining groups by a separate Bill which would be introduced as early as possible.

Mr. SORENSEN asked leave to withdraw the Bill, but leave was refused.

Lieut.-Colonel FREMANTLE said that it might be necessary to withdraw the Bill at a later stage, but personally he hoped that Mr. Sorensen would go through with it. The medical side of the Bill was extremely important, and he hoped that it would not be forgotten even if the Bill was withdrawn. There was a clause in the Bill which dealt with trades which had been neglected in the health services so far—the mercantile marine and mines.

After further debate,

Mr. STRAUSS moved that the debate on the Bill be adjourned.

On a division the motion for adjournment of the debate was carried by 152 votes to 45.

EXPENDITURE ON PAUPER LUNATICS.

Mr. GREENWOOD, Minister of Health, informed Major GLYN that the expenditure of Poor-law authorities in England and Wales during the year ended March 31st, 1928, in connexion with the certification and cost of conveyance of lunatics, was £62,607.

HOUSE OF LORDS.

THURSDAY, NOV. 28TH.

MENTAL TREATMENT BILL.

Earl RUSSELL, Parliamentary Secretary to the Ministry of Transport, in moving the second reading of the Mental Treatment Bill, said that he was not the normal representative of the Minister of Health in that House, but he had been selected for the duty on account of the experience which he acquired a good many years ago on the London County Council, when for several years he used to visit at least two asylums every week and acted for some years as Chairman of Hanwell Asylum. His interest in, and knowledge of, the subject was revived and increased when the Royal Commission was appointed in 1924 and of that Commission he was a member. It sat for two years and reported in 1926. He had been responsible when on the other side of the House for asking why that Report had not been acted upon and why nothing had been done. It therefore gave him special pleasure to present to their lordships a Bill which dealt at any rate with the important parts of the recommendations of that Commission. The Bill did not profess to create an entirely new code. That was recommended by the Royal Commission and would be very desirable, but the system under which legislation was conducted made any Government reluctant to undertake too large and too comprehensive a Bill on account of the difficulties of Parliamentary time. Therefore this Bill which was now before the House was a comparatively small Bill, although the amendments which it made were, from the point of view of the treatment of patients, very important. The Government would welcome any improvements that their lordships could suggest in the passage of the Bill through the House. It had been considered for several years by successive Ministers of Health with great care and they believed that they had arrived at the best solution, but it might well be that some useful amendments might be suggested. The Bill was not in its main features entirely new to their lordships. Lord Onslow had introduced a Mental Treatment Bill in 1923, to which their lordships gave a second reading, and which, he thought, was based on the same principle, so far as the major issues were concerned, as this Bill. He had no fear but that their lordships would welcome the present Bill as heartily as they welcomed that one.

Some Extracts from the Report of the Royal Commission.

The Royal Commission was presided over by Mr. Macmillan, and no opportunity should be lost of expressing the sense of public gratitude that they all ought to feel for his conduct in presiding over that Commission. The subject was extraordinarily difficult and complex. The Commission consisted of twelve persons drawn from all political parties and from all shades of thought, and, after going exhaustively into all these matters, the chairman succeeded in presenting a Report which was unanimous, except in one particular. That was an achievement and was also an encouragement and a support to anyone who attempted to legislate on the recommendations of that Commission. He would quote two or three short sentences from that part of the Report, which would strike the note on which he wanted to invite their lordships to deal with the Bill. The Report said:—

"The keynote of the past has been detention; the keynote of the future should be prevention and treatment."

And, further:—

"Contrary to the accepted canons of preventive medicine, the mental patient is not admissible to most of the institutions provided for his treatment until his disease has progressed so far that he has become a certifiable lunatic. Then and then only is he eligible for treatment. . . . Certification should be the last resort in treatment, not the prerequisite of treatment."

If they were to adopt the analogy that the Royal Commission thought they ought to have between mental disease and any other forms of disease, it surely would be rather absurd not to treat a disease until some symptom had reached a very aggravated stage. What would be thought of modern medicine if they did not treat a case of scarlet fever unless and until the patient had come out in spots and was distributing infection to the community? What would be thought if they did not treat people with an ordinary fever until they had shown that they had it by running out into the cold with a temperature of 102°, and running the risk of pneumonia? This idea was not as new as might be supposed. As far back as 1860 the Commissioners in Lunacy stated:—

"The chances of recovery are much greater when the patients are placed under treatment in an early stage of the attack than when the disorder has been allowed to remain unchecked for some time."

Again, in their Report for the year 1881 they stated:—

"For 40 years and more we have directed our endeavours towards securing the early treatment of mental disorder upon

which, according to all experience, recovery so materially depends."

Sir Frederick Willis's Statistics.

The present Bill was an effort to give statutory form to these aspirations, and he thought it was justified by a sentence which he would quote from some articles in the *Times* that were written by Sir Frederick Willis, a former Chairman of the Board of Control, dealing with the present position. He called their lordships' attention for the moment to this sentence:—

"The evolution of asylums from mere places of detention to real hospitals has taken place."

That was to say, an asylum was no longer a prison. It was no longer a place where they merely confined a man in order that he could not do harm to himself or others. It was not primarily a place where they confined him for that purpose, but it was a place where they sent him for curative treatment in the hope that it would enable him to rejoin his fellow men. In that same article there were some very interesting statistics of the incidence of insanity which are as follows:—

Incidence of Insanity.

A = First admissions per 10,000 population.

Year.	A.	Year.	A.	Year.	A.
1869	4·07	1909	5·04	1923	4·93
1879	4·46	1919	5·25	1924	4·41
1889	4·58	1921	4·91	1925	4·46
1899	4·94	1922	4·94	1926	4·48

Recovery-rate.

Number of Recoveries to 100 Admissions.

Year.	A.	Year.	A.
Average—			
1869 to 1878	38·84	1920	32·21
1879 „ 1888	39·91	1921	32·52
1889 „ 1898	38·81	1922	32·29
1899 „ 1908	37·22	1923	31·64
1909 „ 1918	32·69	1924	34·86
1910 „ 1919	32·27	1925	31·84
		1926	31·85
		1927	31·43

The first statistics dealt with the incidence of insanity, and ran from the year 1869 to the year 1926, and this was the comment that Sir Frederick Willis made upon them:—

"These figures support the statement that the incidence of the disease has not been materially reduced."

The change per 10,000 of population was from 4·07 in the first year to 4·48 in the last year. They also did not support the contrary statement that was sometimes made that insanity was very largely increasing, and to that extent they were satisfactory. They were very hopeful that, if the system proposed by this Bill was adopted, the recovery-rate, or rather the number of recoveries, might be improved. Perhaps he should make it clear that the technical recovery-rate, if it meant the rate per hundred of certified persons to recover, might very well become worse, because they were hoping that all the people who were successfully treated under this Bill would never become certified lunatics, and would therefore be taken out of the recoverable class to which that percentage applied. But they hoped that the total recoveries would be larger and that they would be more quickly effected.

Three Important Points.

Describing the Bill itself, the noble lord said that it really only contained three main matters of importance. The first, Clauses 1 to 4, related to the voluntary boarder, a person who was sufficiently intelligent to ask for treatment, and to wish for treatment. Clause 5 dealt with the temporary boarder, a person who was not in that position but who had to be treated against his will, but only for a time. Those were two important points dealing with patients. Clauses 11 to 15 gave a reconstitution of the Board of Control, to which a great deal of importance was attached. It was enough to say that the Board of Control were now constituted under an Act of 1845, to suggest that possibly the time had come when some amendment might be useful. The other clauses in the Bill were less important. Clause 1 covered a person suffering from mental disorder who was desirous of voluntarily submitting himself to treatment, and who made a written application. He might, without a reception order and without formality beyond the written application, be received as a voluntary boarder, and, in the case of an unmarried person under the age of 18, the will, the voluntas, was transferred to the parent or guardian. That was possible now in the case of most licensed houses. It was sometimes possible in the case of single care, but it was not possible for the poorer class of the community. The present rate-aided mental hospital, or, as it used to be called, the pauper lunatic asylum, had no provision for receiving the voluntary boarder, and at the Royal Commission evidence was given of most distressing cases of people who felt they they were becoming more and more unstable, more and more upset, but that a little rest, a little treatment, would probably set them right again. But they were unable to obtain that treatment from a recognised county asylum, because there was no power to admit them, and they had to go on until they had become so bad that they were certifiable before they could be treated. That proposition has only to be stated to show its absurdity.

Single Care of the Voluntary Boarder.

There was another point, of course, about the voluntary boarder, and that was the danger which any doctor suffered who took such a person into single care, and who was always liable to prosecution for harbouring an uncertified lunatic. He was not allowed to take charge of a person who was certifiable unless he was certified. These people were not intended to be certifiable people; it was hoped that they would never reach that stage, and there would be some protection here in the fact that the early treatment was recognised as a possibility. He called special attention to Subsection (3) of Clause 1, by which a person who was received as a voluntary boarder, although he had entered voluntarily, was not allowed to leave at a moment's notice. He must give 72 hours' notice. In a sense it might be said that they were imposing on the voluntary person imprisonment; in a purely legal and technical sense that was, of course, absolutely correct; but it was quite plain that it would not be safe, and it would not be in the interest of the patient, to allow him to leave at a moment's notice, since the very occasion when he would be insisting on leaving, and requiring to leave, would probably be just that occasion when he had become so mentally unbalanced as not to be able to look after himself or give himself proper care. This period of delay of 72 hours, therefore, which was by no means necessarily interposed in every case, but only where the medical officer thought it necessary, gave the opportunity either for the patient, as very often happened, to come back to a better mind before the 72 hours were up, and to say, "I will withdraw my notice and stop," or, if it had unfortunately become necessary, to proceed to the extreme measure of certification. Without that provision, it might well happen that the treatment would fail of effect and that the patient would destroy the whole value of it by his impetuous action in some special moment of excitement, or owing to some irritation caused by something that had happened. What were the protections of those patients? In Clause 2 their lordships would notice that notice of a patient's reception was to be given within two days to the Board of Control. That notice was equally to be given to the Board of Control if he died in or departed from the institution where he was being treated; and, finally, should the patient become incapable of volition, should he no longer be able to exercise a choice, or a will, he was not to be kept as a voluntary boarder for more than a month; but before the end of that period he had to be discharged unless either he had again become capable of volition—a thing which often happened—or steps had been taken to certify him. In all these cases the Board of Control was the body that the public might rely upon to see that the patient was not unfairly treated.

The Earl of ONSLOW: Will the voluntary boarder come under the provisions of Clause 5, temporary treatment, if he becomes incapable of volition?

Earl RUSSELL: Yes, and I think that that period of one month would probably be used in order to apply Clause 5 to him. Continuing, the noble lord said he hoped that might be possible in every case where it was not necessary to proceed to full certification. The effect upon the minds of the Royal Commission of all the evidence they heard, including the evidence from the Board of Control, was that the real safeguard for every person, either insane or alleged to be insane, or partially insane, who was detained or under treatment anywhere, was the existence of the Board of Control itself—and by this Bill the powers of the Board of Control were to some extent increased. If notice was given to the Board of Control there could be no secrecy, if a visit was paid by the Board of Control there could be no concealment, and there could be no deception of the experienced officials that they would send to visit. That was really far more of a safeguard to patients than any other safeguard, but he would deal with that more fully on Clause 5. Under Clause 3 a commissioner, that is, not necessarily a member of the Board of Control, but a commissioner as provided by a later clause—an official visitor of the Board of Control—might at any time visit a voluntary boarder, and he might report on the case, and then the Board of Control, if they were of opinion that his state of health was unfit for him to remain as a voluntary boarder, might order the superintendent to discharge him, or might take steps to deal with him, if necessary, as a person of unsound

mind. With those protections there could be very little to be said against the voluntary boarders. The man entered of his own free will, his maximum detention was 72 hours if he gave notice to leave, his maximum detention was one month if he became incapable of free will, and at all times he had over him the controlling hand of the Board of Control, who could give orders as to what in their view was proper to be done in his case. That did not seem to the Minister of Health to leave much opportunity for abuse.

The Temporary Boarder.

Now he came to what was perhaps a little more contentious—namely, Clause 5. That clause provided for what was called the temporary boarder, a person who was suffering from mental disorder, incapable of volition and likely to benefit by temporary treatment. In his case, if an application was properly made and a proper medical certificate was given, he might be detained for six months. That period of six months was a period in which, according to the evidence and the statistics, a very large number of recoveries took place. It might not be, perhaps, as long a period as would really be useful, but the Minister of Health had been very moderate in his estimate and had only suggested detention for six months. In what way did the circumstances in which such a person was detained differ from the circumstances of full certification? So far as the application was concerned, there was no great difference on which he need dwell. The application must either be made by the husband or wife or a relative. If not, it must state why it was not made by them and what the interest was of the person making it. The patient must then be examined by two doctors. In the ordinary case of certification of the rate-aided patient only one doctor was required. But the great difference was that there was no interposition of the justice of the peace. In the view of the Government the two doctors provided a far greater safeguard than any number of justices of the peace, and it was provided that one of the two doctors was either to be his usual medical attendant—that was in Subsection 3—or, if not, he was to be an official person officially appointed who could have no interest of an improper character in the matter. The Royal Commission suggested a rather different form of treatment for the same purpose by what was called in their report a provisional order, and they did introduce the justice of the peace. The provisional order had been thrown over by the Ministry of Health because, although the intention was to remove the stigma of certification, it was fairly obvious that in a very short time it would have been held as exactly equivalent. One had the doctor, the justices, and all the other incidents of full certification. Therefore, this suggestion was put forward. What harm was that likely to do? He would read a short quotation from the report of the Royal Commission.

"That in practice instances of sane persons being wrongfully certified or improperly detained must be of the rarest occurrence. We think it proper to record that in none of the cases which were investigated by us were we satisfied on the evidence that improper detention had been suffered."

They went on to say in connexion with another matter:—

"Ill-usage is not deliberately or systematically practised in mental institutions."

His next sentence was again a quotation from Sir Frederick Willis:—

"The only hope of reducing the incidence of insanity and improving the recovery-rate is to alter the law so as to allow and encourage the early and skilled treatment of persons mentally ill."

On the point of the justices of the peace the Royal Commission said that they reluctantly recommended retaining the justices of the peace. They recommended it merely because they were afraid of Parliament and uninformed public opinion. But they added this sentence to which their lordships would give full weight:—

"If we were free to consider exclusively the medical treatment of the patient we should have little hesitation in accepting this suggestion."

That was the suggestion of certification without the justices.

Modern Methods in Mental Disease.

There still existed in some places the feeling which was aroused, possibly naturally and justifiably, nearly 100 years ago against confinement in asylums and asylum treatment. For that feeling there existed no justification to-day. Every person connected with these institutions devoted his whole thought and his whole attention to curing his patient if he possibly could and, if he could not entirely cure him, at least to ameliorate his condition. The fear which then existed was a fear which need exist no longer. So far as rate-aided institutions were concerned, there was no temptation to them to detain the patient one day longer than they could help. They were full; they were overfull; they had difficulty in finding accommodation. The trouble recently had rather been, perhaps, the other way—that sometimes people were discharged almost before they were fit to be at large. He submitted that they should recognise now that a doctor was not that sinister figure which in former times he was represented to be, anxious simply to confine a man to a dungeon for life, but that he was treating mental disorder in exactly the same way as he treated any other disease, with a sole view to its cure. When they used such phrases as "liberty of the subject"—and no one attached more importance to real liberty of the subject than he did—let them reflect upon what the circumstances were. If their daughter had a fever was she not restrained in bed instead of being allowed to run out in the cold air to die of double pneumonia? They did not invoke the justices to do that. They did not even invoke the ordinary certificate. They did it as a matter of course. If one of their lordships was delirious and in a fever he would be without volition within the meaning of this Act for the time; he would not know what he was doing. He would not appreciate that he was being treated. Nobody hesitated in those circumstances to restrain personal liberty until the time when it was necessary to restrain it was passed, and that restraint was, of course, in the obvious interest of the patient. When the patient had recovered the patient was grateful for it. Precisely the same thing happened in the case of mental treatment. The vast majority of these patients were grateful when they recovered for the treatment they had received and recognised the good that had been done them. Therefore they ought not to be led away by mere words on this matter.

Visits to Mental Patients.

There was still another thing to be remembered, and that was the number of visits which might be paid to these patients. First of all, there was the Board of Control entitled to visit at any time and as often as they liked. Then there was the superintendent of the asylum himself who, of course, visited his patients regularly, though they might regard him as an interested party. In the case of the rate-aided asylum, there was the visiting committee or, in the case of the licensed house, the visiting justices. Then there were the patient's friends who were at liberty to visit the patient and hear his own account, for what it was worth, of his treatment. Finally, in the case of patients who had property, they had the Lord Chancellor's visitor. So their lordships might take it that these people were, and would be, well protected. In Subsection 9, in addition to the Board of Control's visit, within one month the patient was to be visited by two members of the visiting committee or, if not, by two of the visitors of licensed houses, and that after that visit they were to sign a statement either to the effect that it was proper the patient should continue to be detained, or that it was not proper, and then they should within two days again report to the Board of Control stating their opinion.

In Subsection 12, dealing with the powers of the Board of Control, it was provided that at any time they might order that a person received as a temporary patient should be discharged, or that steps should be taken to deal with him as a person of unsound mind. He thought that the public really had no reason to fear these provisions. The whole object nowadays was to assimilate the treatment of mental disease to the treatment of other disease. For his own safety, and sometimes for the safety of other people, it was unfortunately essential that the patient should be placed under restraint and deprived of his liberty, which was sometimes only an incident and might be of only a few days' duration. That it should be necessary to put him upon the stigma of full certification for that purpose, or that he should have become so bad that he must be fully certified before they treated him at all, was a thing which could no longer be tolerated. The provisions in this Bill were likely to do a great deal to prevent people ever reaching the stage of certification, and to empty, in that sense, the certified wards, and to send the people back without that stigma which was a very serious stigma both in the matter of reputation and in the matter of employment.

Reconstitution of the Board of Control.

Clauses 11 to 15 were the clauses which reconstituted the Board of Control, and this reconstitution was in accordance with the views which the Royal Commission expressed. As a member of that Commission he welcomed it, and he would explain the present position. There were about twelve Commissioners, some medical and some legal. They had the duty not only of regulating policy and principles, but of visiting all these various institutions which this and the principal Act imposed upon them. The result had been that they were so busy running about the country

that they were never able to have real consultative committee meetings in London, as they should have, to decide upon the principle and the policy to be applied. These clauses proposed to divide the Commissioners into two parts. There would be five in all who would constitute the Board of Control, and the idea was that those five should have primarily as their duty the coördination of the control of all the general matters relating to administration, of which there were a great many—provision of drugs, the qualification of nurses, the staffing of asylums, the construction of asylums, and the thousand and one matters of policy that were proper to be centred and fully discussed: and those five people would be able to meet regularly, and without interruption, and discuss these matters. They would be called the Senior Commissioners. There would be other Commissioners, and there would also be Assistant Commissioners, and those Commissioners and the Assistant Commissioners would primarily do the visiting that was required. Clause 13 provided that one Commissioner might carry out visits which were at present sometimes required to be made by two. In a great many cases the law required two Commissioners to visit when there was no sort of reason why more than one should do so. It had been found impossible to carry that out for some time now on account of the difficulty of the numbers; but under this clause, as the Commission would now be constituted, the visiting would primarily be done by the Junior Commissioners and the Assistant Commissioners.

Five members of the Board of Control would meet regularly and control policy, and would, of course, themselves visit these institutions from time to time in order to keep abreast of what was being done, and to learn with their own eyes what was going on. Under Clause 11 there was to be a Chairman. That was in Subsection 1. In Subsection 2 there was to be a legal Commissioner, a medical Commissioner and a woman. That accounted for four, leaving one place vacant which could be filled up by another medical Commissioner, or as might be thought most desirable. The existing Commissioners who were not members of the new Board of Control would continue as Junior Commissioners, although that word was not used in the Bill, and there would also be Assistant Commissioners. Subsection 7 provided that such salaries should be paid to these Commissioners as the Minister and the Treasury might determine. The Royal Commission expressed a very strong view that the position of the Chairman of the Board of Control was so important and so responsible that a substantial salary should be attached to it. Clause 12 mainly provided that the Chairman should be primarily responsible for the arrangements. The only other clause he need call attention to was Clause 15, giving a power to make rules, which was, he thought also, in the Bill of 1923. The Royal Commission attached a great deal of importance to this reconstitution of the Board of Control, because it became very evident to them that it was impossible for the work to be done as it should be done under the present Constitution, and perhaps it was, from the point of view of administration, a reform which would be as useful as any reform could be.

Clause 6 required the local authorities to provide the necessary accommodation for temporary patients. It was not likely to increase their total accommodation. In fact, they hoped on the whole that in the end it would diminish it. Clause 7 provided for the appointment of a Visiting Committee. Clause 8 provided for the circumstances which had arisen under one or two Private Acts, such as the Maudsley Hospital, where special circumstances applied.

Granting of Certificates; The Question of Immunity.

Coming to the miscellaneous clauses, he would call attention to the substituted Subsection 2 in Clause 16, which was an attempt to provide some further protection for the medical men who gave certificates. Recent actions, particularly, perhaps, the Harnett case and other actions, had not unnaturally frightened medical men, and they were very chary of giving certificates for which they might be shot at, particularly as in the Harnett case, twelve years later. It was a very grave responsibility for a professional man to take. It not only costs him money, it might ruin him professionally; and the result was that after that case there was a very great shyness on the part of doctors in giving these certificates in proper cases. No one could blame them for that. They were not paid more than an odd guinea of two and they were taking a very serious risk. The Royal Commission was pressed by the doctors to give them complete immunity. Those on that Commission who were lawyers felt that that would be contrary to the principles of the law, and that they could not go as far as that. The doctors themselves said, when asked: "No, we are not asking, and we do not ask, immunity for a rascal or a rogue or even for a thoroughly reckless person. But we do say it is a little hard that people who are exercising their profession honestly and to the best of their ability should be shot at in this way."

The Earl of ONSLOW: Does this immunity apply to certificates regarding people not capable of volition under Section 5 of this Bill?

Earl RUSSELL: I am not sure, but I think it is intended to.

Viscount BRENTFORD: Yes, if the noble Lord looks at Subsection 2, he will see it refers to anything done under this Act.

Earl RUSSELL: Yes, I think so. I would not like to answer offhand, but I think it applies to this, too. Continuing, the noble lord said that the Royal Commission considered this matter very carefully. The legal members gave attention to it, and took advice for several days and talked the matter over, and finally recommended the form of words which were now embodied in the substituted Subsection 2. The effect of these words was not to give the doctors immunity, but to shift the onus. The Bill said:—

"... such proceedings shall ... be stayed on such terms as to costs and otherwise as the Court may think fit, unless the Court is satisfied that there is substantial ground for alleging that such act was done in bad faith or without reasonable care."

He could not help feeling that that would present some difficulty to His Majesty's judges, but there were statistics containing somewhat similar provisions on which they now and then acted. There was a statute about vexatious actions, and other statutes of that kind. What it really meant was that the plaintiff would have to satisfy the judge *in limine* that he had some sort of a case. It did not follow that it was a good case, or that he would win it, but he would have to satisfy the judge at an early stage that he had a prima facie case and that there was something which properly required investigation. It was not by any means a final protection to the doctors—very far from it—but it was some protection, and he hoped it might do something to protect them from suffering from legal actions when they had done the best they could.

Urgency Orders.

Clause 17 made urgency orders applicable to rate-aided persons. Curiously enough, urgency orders were only applicable to private patients. Why, he did not know. It was a useful form, and the rate-aided person could only be—so to speak—taken in charge if he was found wandering or in other circumstances when he was dangerous to himself or to others. This provision would give the opportunity of making an urgency order in all proper cases. Clause 18 was one to which a good deal of importance was attached. The people maintained in rate-aided mental hospitals were called pauper lunatics, the place in which they were maintained was called a pauper lunatic asylum, and the whole thing was done under the poor-law. The extraordinary result of that legislation was this. Their lordships would hardly credit it, but there was no doubt that what he was saying was correct. If a person became suddenly mad in the street, was taken by a relieving officer to the workhouse, was there certified and sent to an asylum, even if subsequently it was discovered that he was a person of means, even if he repaid to the poor-law authorities the whole of the expenses to which they had been put, he became and remained a pauper. That was clearly a ridiculous state of things. It was desired now—and the passing of the Local Government Act last session made it possible—to assimilate the treatment of this form of disease with the county medical services. This clause provided that:—

"A person shall not be deemed to be in receipt of poor relief or be deprived of any right or privilege or be subjected to any disability by reason only ..."

of anything done to him under this Act or under the principal Act. It was time that was done.

Clause 19 was merely a provision enabling county councils to use those workhouses which would come into their possession under the new Act. Clause 20 carried out what he had just spoken about, the change of name. The change of name implied a change of spirit, and the treatment would be different, and therefore it was appropriate that these hospitals and the people who were treated in them should receive new names and new appellations. He would say one word about the things which were not done under this Bill. It had not made a complete code for obvious Parliamentary reasons. It had not assimilated completely the method of certification in private and pauper cases which for historical reasons no doubt differed in the Lunacy Act of 1890. That would have meant rewriting the complete code and it had therefore been left over.

Licensed Houses.

The Bill had done two things which met the points that mattered; it had given the urgency order to the rate-aided persons and had removed the pauper stigma from the

rate-aided cases. Neither had the Bill dealt with the vexed question of licensed houses. So vexed was the question of licensed houses that it was the only question on which the Royal Commission disagreed. There were six on one side and six on the other. But the time had come when Parliament must some day or other make up its mind what it was going to do about licensed houses. The licensed house was an institution for the treatment of insanity, which was run by a doctor or several doctors, or at any rate had to be staffed by a doctor, whoever was the owner, for private profit, and the public were perfectly right, no doubt, in looking with the very gravest suspicion upon places of that kind.

When Parliament last dealt with this question in 1890, it adopted a quite illogical and a quite indefensible half-way house attitude. The existing private licensed houses were allowed to go on; no new licensed houses were allowed to be created. No number of beds were allowed to be added to those already in existence in the licensed houses then existing. In effect, Parliament said: "We are not quite sure whether this thing is so bad that it ought to be swept away altogether, but at any rate we are not going to let it be increased," and the number of beds in 1890 was the number of beds up to this date. That was not a logical attitude. He would not say which of the two other attitudes was right, but it was obvious that one must be right. Either a licensed house was a necessary institution serving a beneficent purpose in the case of a private patient who could afford to pay for treatment, or it was an evil that ought to be swept away. Actual inconvenience was caused by this because in fact licensed houses were not so geographically distributed as to be convenient. That had nothing to do with this Bill, but as he had mentioned what was not in it he thought he ought to mention the matter on which the views of the Royal Commission were divided half and half. He had been through the Bill very carefully with the Chairman of the Royal Commission and he had authorised him to say that he welcomed it as a most useful instalment of the reforms which the Royal Commission proposed.

Liberty of the Subject.

Viscount BRENTFORD said that for a certain time while the Royal Commission was sitting he occupied the position of Minister of Health, and therefore he was in somewhat close touch with the Board of Control and the questions, so far as the administration was concerned, which were submitted to the Royal Commission. For many years the question how best to deal with insanity had troubled Parliament and the country, and he was very glad to be able to associate himself with Earl Russell in what he said in regard to the modern view of the treatment of insanity—that it should be taken at the earliest possible stage and be put as far as it could be put upon the same lines as ordinary disease. But, of course, there was distinctly a difference between the disease of insanity, whether it was mere lack of volition or complete insanity, and every other physical disease to which flesh was heir to. That was, of course, the question of the liberty of the subject. For a couple of hundred years at least there had been commissions and inquiries and Acts of Parliament of every kind, and before the Act of 1890, which was really the foundation of the Lunacy Laws, there were 40 or 50 Acts dealing with this question. Running throughout the Act of 1890 was noticeable the meticulous care of Parliament for the liberty of the subject. While he (Lord Brentford) did not intend to oppose the second reading of the Bill, there would be certain points to be raised on the Committee stage which ought to be mentioned at once because they appeared to be of considerable importance. He hoped Earl Russell, when he had heard what these points were, would consult with him as to necessary amendments in order that the Bill might go through in a satisfactory form. He wanted to clear uncontentious points out of view, and he entirely accepted the view of the Commission that there was no ill-treatment, or rather that no cases of ill-treatment were proved to them. That, however, did not quite go far enough. Earl Russell had told them quite frankly that there was both Parliamentary hesitation and uninformed criticism in regard to the question of the liberty of the subject. Under the existing law whenever a man or woman had to go into one of these homes, private homes, single-case homes, or rate-aided institutions, there had to be an inquisition of some kind or another by some kind of judicial authority. The great inquisition had now almost gone into desuetude, that was the inquisition by a master in lunacy with, or without, a jury. There was a petition for a reception order certified by two medical men, and then there was a safeguard that the petition must be presented to a special justice of the peace who had the power, if he so desired, to see the patient before the reception order was issued. That was not only a safeguard for the patient, but for the medical men themselves. Earl Russell was proposing to take away a great deal of the legal responsibility of medical men and at the same time he took away the one great safeguard both for the medical men and the patient who was supposed to be placed in a hospital.

The Young Person under Eighteen.

If one looked at the Bill it would be seen that the voluntary boarder was dealt with under Clause 1. Earl Russell referred to such a person as a man or woman who desired—rightly and sensibly desired if they liked—to place himself or herself under control for the purposes of being benefited by medical treatment in a mental hospital. He agreed that if a man or woman had sufficient sense to realise the desirability of treatment he or she might quite rightly place himself or herself there, but the noble Earl had referred to another case, and that was the case of a young person under the age of 18. Why 18 was fixed he (Lord Brentford) did not know, but he supposed that anybody over 18 was for the purpose of that clause to be treated as an adult entitled to put himself into a mental home. The case of the young person under 18 he thought should be most carefully considered by their lordships' House, which had always protected the liberty of the subject. Take the case of a boy or girl of 17 who might be a little silly, as the expression was used in some parts of the country, who might be also a great burden at home, troublesome to the parents. That young person, without any assent on his or her part, a boy or girl of 17, nearly 18, might be placed as a voluntary patient—there was not much that was voluntary about it—on the written request of the parent, the guardian, or a person who acted in the position of guardian. In his (Lord Brentford's) view the Bill needed amendment in that respect. There was not even to be a medical certificate, much less any judicial authority. It was merely left to the parent or guardian to say: "I am very worried by Tom or Jane, who is very troublesome. I will lock him (or her) up." Under the Bill he thought it was quite possible to do that. Of course he knew that there was a Board of Control over and above all cases, but Earl Russell had tried to prove too much in regard to the position of the Board of Control. If the control of the Board was so effective in regard to these people who might be placed under voluntary detention, or under Clause 5 in temporary detention, because they were incapable of volition—why trouble at all about medical certificates, why trouble at all about the reception order which still, he took it, would exist under the old law for the man who was flagrantly and patently insane? It was rather remarkable to retain, as the noble Earl said in bringing in his Bill, the greatest safeguards, including the judicial safeguard, in the case of the man who was flagrantly and patently insane, and whom everybody would put into an asylum, while for the more doubtful cases the safeguards were swept away. The noble Earl must reconsider the first clause of the Bill. As regards adults, he (Lord Brentford) would prefer the age to be 21 rather than 18, and he was not sure that the young man or woman of 18 or 21 ought to be allowed to put himself or herself into a mental hospital for treatment without any medical or judicial certificate. That was the position under the Bill, and he was not satisfied that parents or guardians or "any person who undertakes or performs . . . the duty of a parent or guardian"—it was a curious expression—ought to be allowed so put people at the age of 18 into homes for medical care.

The Meaning of "Volition."

If they turned to Clause 5 relating to the temporary treatment of persons without full certification, they found a reference to people who—he thought this was a new expression; he had not been able to find it in any Act of Parliament relating to lunacy—"were incapable of volition." It was difficult to know quite what that meant. The gradations of lunacy were so many and shaded from one to another so easily that he thought the noble Earl had tried to find a new expression to provide for these temporary cases. He wondered whether the noble Earl would consider him (Lord Brentford) incapable of volition if he said: "I am blowed if I will go into a hospital." He would use no stronger language than that. The patient might be slightly insane, but he had enough volition to say: "I will not go in"; and yet he might be a person for whom treatment would be highly desirable. He thought that this portion rather needed amending, and he was certain that there must be an amendment dealing with the question of a judicial decision. The Government had thrown over the Commission and the report which Mr. Macmillan, Earl Russell, and the present Attorney-General had signed. The noble Earl had signed that document, as did his colleagues, including the present Attorney-General, and though they signed it with reluctance the very fact that they signed it with reluctance meant that they were so

impressed that, though they would have liked a Bill in the form in which the noble Earl had introduced this Bill, they were convinced that the jealousy of the law of England for the liberty of the subject was such that it was unwise and undesirable to have it. He (Lord Brentford) appealed from Earl Russell as sponsor of this Bill to Earl Russell as a member of the Commission who signed the report, and he earnestly asked him that when the Bill came to Committee some form of judicial inquiry—he did not want to be too dogmatic—should be grafted on to it before any man or any woman who was incapable of volition, which meant in the incipient stage of insanity, who was unable to understand what he was doing or what was being done for him, should be locked up in any form of mental hospital without, as in the past, some form of judicial inquiry. That was the more essential because of what the noble Earl said about transferring the onus of proof (Clause 16) in regard to the medical man. He (Lord Brentford) was willing and anxious to do all that he could in that respect. He well knew, as a lawyer and as one who had held Ministerial office in the other House, the scandal—he thought that was not too strong a word—of certain actions taken against medical men. They wanted to get rid of that. He should have liked the opinion of one of the judges upon this proposal of shifting the onus of proof. He was prepared to do all that he could to help the Government, but, if the medical man was to be given this protection, at least the patient must have the protection of a judicial inquiry that he had up to the present time. They were taking away with both hands. They were taking away both the judicial inquiry and the right to sue the medical man who might have made a mistake in these matters. But more than that. If their lordships would look at this clause of the Bill it did not only apply to the doctors.

"If any proceedings are taken against any person for presenting any such petition or for signing or carrying out, or doing any act with a view of signing or carrying out, any such order, report, or certificate, as mentioned in sub-section (1) of this section . . ."

—and so on. It was not only the doctor. He did not know why it had been thought necessary to put into the Bill this protection, not only for the doctors but for the person who signed the petition for the reception order, the uncle, the wife, the parent, or the guardian. At least, there was no reason for transferring the onus of proof in regard to them. But he quite definitely asked the Government to consider that point also before the Bill reached the Committee stage. With the other clauses he largely agreed. With regard to the Board of Control, he thought it desirable that there should be a more centralised board. He would like to hear from the noble Earl more about the composition of the Commissioners, and he knew that Lord Onslow was very keen indeed that the Board of Control should be strengthened, particularly the medical element in it. He was quite sure that after the House had heard his noble friend the Government would be prepared to accept a reasonable amendment in that direction. There was one other thing in regard to the transfer of powers from the Minister of Health to the Board of Control, about which the noble Earl said nothing. He had not referred to all the Acts of Parliament, but he (Lord Brentford) had been through the schedules, and there were certain of those powers which he thought ought to remain in the hands of the Minister. After all, the Minister of Health was a Member of Parliament, and, as a Minister, he could be called to account for the exercise of his powers in the House of Commons or in that House. The Board of Control could not be so called to account. They might say, of course, that the Board of Control was appointed by the Minister, and the Minister had some shadowy control—not so much if this Bill became an Act as he had to-day; and he would like the noble Earl to consult with the Minister as to how far it was necessary to transfer all those powers. If their Lordships read them carefully, they would see that it was too great a transfer of powers from the Minister to the Board of Control. In this Bill there were the germs of great good, and, taken as a whole, it would very largely improve the medical position, the medical care, and the medical treatment, particularly the incipient medical treatment of those who were a little bit over the border line between sanity and insanity. At the same time, while that was important, it was perhaps still more important that that Parliament should guard the liberty of the subject.

The Medical Aspect.

Lord SANDHURST said that, speaking in general terms, he approved the Bill. The Government were very wise to deal only with the most pressing aspects of the matter. Unlike Lord Brentford, he was extremely glad that the Government had had the courage to differ in some respects with the Royal Commission, and not to connect the question of temporary treatment with any judicial or legal proceedings. It seemed to him that what they needed to do was to emphasise the medical aspects of the matter, and to dismiss from their minds any question of placing the patient in the position of one who was a sort of criminal standing his trial. It was very important, both from the point of view of the patient's treatment and that of the education of the public, that the medical aspect of the case should be emphasised as it was in this Bill. Another provision which he particularly welcomed was one which Earl Russell had not mentioned—the after-care of patients by local authorities, or with the assistance of the local authorities through after-care associations. After-care was nearly, if not quite, as important as the treatment during detention. That did not apply only to poor people. He would be glad if the loss of volition for a month did not automatically put an end to the status of the voluntary boarder. Up to now the Board of Control had, he believed, exercised a discretion in regard to the position of voluntary boarders, and he suggested in regard to Clause 2, Subsection 3, that instead of requiring the voluntary boarder's status to be terminated in the case of loss of volition, notice should be given to the Board of Control, and they should have power, as they had under the next clause, to determine whether the patient was a non-volitional case and should be certified. He knew that the period of certification was a deterrent to persons who might take advantage of the position that they could acquire as voluntary boarders. In Scotland the patient was allowed to retain his position as a voluntary boarder so long as he did not insist upon the right to be discharged. He was very pleased to see that the period of notice was increased to 72 hours. There should be a little more discretion in regard to non-volitional patients. There was a provision in the Mental Treatment Bill of 1923 that, in the case of a non-volitional patient who showed signs of recovery, but had not completed his recovery at the end of six months, the Board of Control should be able to extend the period of six months for a further three months, and if necessary for another three months after that, provided that it did not exceed twelve months in all. That was a provision which he would very much like to see added to this Bill.

The Power of Discharge.

He very much regretted that one recommendation of the Royal Commission had not been adopted. On page 93 of their report the Commission commented on the power of the petitioner in regard to the discharge of a patient, and pointed out that the power might be used to the detriment of the patient, because the only restraint upon it was that the medical superintendent might certify that the patient was dangerous or unfit to be at large. The Commission then went on to recommend that he should also have power to certify that discharge to the petitioner would be contrary to the welfare of the patient. If rules were made under Subsection 5 of Clause 5 of the Bill, he hoped that there would not be unqualified power to direct the discharge of the patient, and that regard would be had in any rules that the Board of Control might make to the recommendation of the Commission in that respect. He should also like to inquire as to the qualifications of the proposed Assistant Commissioners. He was not quite clear from what Earl Russell had said, and from his reading of the proposals in the Bill, whether Commissioners would be appointed in the future as well as Assistant Commissioners. He wished to emphasise the importance of the qualifications of Assistant Commissioners being at least as good as those of the Commissioners of the present day. He also thought that the legal element ought still to be recognised as having some value in the qualification of a Commissioner. A further suggestion he would make was, that in the appointment of assistant lady commissioners regard should be had to nursing qualifications. He was anxious as to whether provision for shifting the onus would be sufficient to relieve the minds of the legal profession, particularly having regard to the real increase of responsibility. There was no doubt that the intervention of a magistrate greatly relieved a medical man of responsibility. He had observed in the course of his studies that there was judicial authority for doubting generally whether the sole and legal cause of detention was not the judicial act of the magistrate, and not at all that of the certifying physician. But that would certainly not be so in regard to the non-volitional cases. Therefore he thought that the position of the medical man who had to take a serious responsibility should be strengthened as far as possible. He was afraid that he did not see any very great protection in the shifting of onus, because, as things stood at present, if an action was brought a medical man had to go into court prepared with all the evidence to justify his position, and it was a very poor case which could not produce some prima facie evidence which threw the onus on the medical man. Therefore, if possible, he would like to see some provision inserted which would make the

position of the certifying physician, or recommending physician, somewhat safer than it was at present.

Legal Enactment and Informed Opinion.

Lord DAWSON said that the Bill appeared to him to make an attempt at long last to adapt legal enactment to informed opinion. The Bill would be rendered nugatory unless the House could persuade itself to disentangle its old ideas about machinery, for it was useless to have a new idea and seek to embody it in legislation unless they were prepared to take a new view of their methods to correspond to the newer methods of their idea. That was the first and general criticism he would make of the speech of Lord Brentford. This idea had been growing for years. Informed opinion had been wanting reform, and the public had gravely suffered because it had not had the reform. He took it that the object in mental as in bodily disease was early diagnosis and early treatment with a view to the prevention of more grave maladies arising. As the present law existed, obstacles were placed in the way of such early diagnosis and treatment. The law was based on the assumption that mental ailment was insanity, insanity which was the final result of many deranged mental processes, and there had grown up, therefore, in the public mind the notion that any kind of mental disease was associated with some slur, some disability, some permanent disadvantage, inflicted on that person and on his family. The result was that anybody who was afflicted with mental ailment, and the friends of that patient, unconsciously entered into a conspiracy to prevent that ailment being handled, for the simple reason that they knew there was only one way of that condition being treated, and at any rate there was a danger, if it was thus treated, of that patient being dubbed insane, and treated as an insane person. To his mind, therefore, it was necessary to make the machinery of the Bill as new and fresh in its shape and form as the ideas which inspired it. If they left what they thought of as insanity and came down to mental derangement, they would find that it was constantly side by side with physical derangement. It was often a matter of chance whether a patient who had been ill suffered from a mental or a physical complication. There was a close connexion; the two were often blended with each other at one stage as distinct from the end result—namely, insanity. The two conditions needed to be treated as nearly as possible alike. They wanted the world to look upon the one as on all-fours with the other. He would give a simple example. Take a patient afflicted with typhoid fever. There were certain complications which followed on typhoid. It was a matter of chance whether that person suffered from a clot on the brain or from some temporary mental derangement. Why should they treat one differently from the way they treated the other? It might be that they had been restraining that patient in the acute state of the illness, restraining him, if necessary, through delirium, and why should they not apply the same medical treatment to the mental complications as they did to the bodily complications? They had to keep constantly before them in building up any new Act of Parliament that new conception. With civilisation such as existed to-day, with the increasing speed and strain of life, with that characteristic of civilisation in which the material progress was going too far ahead of man's power of adaption, it would inevitably follow that they would get a larger number of temporary mental troubles; and they would find a blend. They would find a physical trouble followed by mental symptoms, and the contrary. There was a greater merging as between the one and the other. The fact was the disease, if he might use the expression, bred less and less true. It conformed less and less to type. In the days of acute infections, when the causes of disease took the form of an invasion by a virulent agent or infection from without, the force of the external agent was such that it reduced the sufferers almost down to a common type, with the result that the type of illness was relatively easy and uncomplicated to treat and manage. But in these days when acute infections were gradually being wiped away, when the external agents were less strong, the colour and the pattern of disease was more likely to be determined in greater degree by a man's make-up, his family history, his environment, the strain he had been liable to meet. The result was that they got a more complex picture than in days gone by, and in that complex picture they very often found such conditions of mind as the House was now discussing. He would, therefore, plead with their lordships in approaching that question that they should see to it, not only that they had buried the old ideas of mental ailment, but that they saw that the machinery was new in its outlook, and not cramped by a too close adhesion to the machinery of previous Acts of Parliament. The Bill was a really considerable advance, which would have the support of all the best thought in the medical profession.

The Voluntary Boarder Class.

He came now to the first class of mentally afflicted people. Temporarily mentally afflicted people—namely what he might call the voluntary boarder class. He would prefer to call them mental patients. He (Lord Dawson) could see no objection, but rather an advantage, in protecting the young up to the age of 21, and strengthening the clause by not giving sole power to the parents, but providing that there should be a medical certificate. That would be an improvement in the Bill. The newest and the greatest idea in the Bill was that part of it which referred to those of lost volition. A large part of the benefit which was going to accrue from the measure would depend on the wisdom and courage of Parliament in the clauses that set forth that idea. Take the persons who had lost volition. That was a condition which quite commonly followed physical illness. Were they going to say that in the case of a woman who had puerperal fever and lost her volition, that before anything could be done to the patient they must seek a judicial authority? If they were going to do that they would remove the benefit of the clause, and would revive all the old prejudicies which were entangled round the old Acts. He would ask them to believe that technical knowledge had grown, that the medicine of to-day was not the medicine of 50 years ago. It was true of medicine as of any skilled calling that it became so technical that they had to trust the people who had studied the calling. That was going to be a problem of the Government in the future. So technical and so extensive and so rapidly did knowledge grow that Government departments would not be able to master all the knowledge of this or that skilled calling. They would have to fall back on the skilled advice of each profession in turn. Medical men now had greater knowledge and greater judgment. There was a public opinion rising up in the profession that grew stronger each year. It was the public opinion in the profession which was the great safeguard against abuse. If they once introduced judicial authority, wholly unsuited to judge of the question and more and more unsuited every year, two things would happen. They would not have the advantage of this great part of the Bill. It would not be taken advantage of by the patients, nor would the doctors try to make them take advantage of it. They were not going to have their skilled opinions overhauled by local magistrates who did not understand the A.B.C. of their profession.

Viscount BRENTFORD:—Does the noble lord intend that to apply in the future to the case of the wholly insane?

Lord DAWSON said he was dealing entirely with these difficult cases of mental illness. Just as he did not want to go to a magistrate to ask if he might restrain a delirious patient, he did not want to go to him to restrain a patient who was suffering from a complication after that illness. When they came to certified insanity, it was another problem. That patient was in a state of disablement. He was so disabled that either for his own safety or for that of the community he had to join a cloistered class. They would therefore make such a serious inroad on that patients liberty, and for such a length of time that it was necessary to have more control in the case. The question of temporary loss of volition—there were ample precautions in the clause—should be left to the decision of medical men—two if they liked. But there should be no interference in that kind of symptom, any more than with the physical symptom, by any kind of outside authority. He thought that the two clauses dealing with voluntary boarders and with those persons who because of physical illness had temporarily lost volition, if they were applied and carried out without undue restraints and crippling provisions, would go very far to prevent much mental disease and a great deal of mental suffering, and would add to the sum total of the health of the community.

The EARL of ONSLOW said that they were now asked to reduce the number of the paid Commissioners to five, of whom one should be legal and one should be medical. This medical man would be really the Chief Medical Officer of the Board of Control, and the responsibility on the medical officer seemed to be a very heavy one. He wondered whether it would not be safer to have two medical Commissioners.

A Measure of Reform.

Lord DANESFORT welcomed the Bill as a long overdue measure of reform. It seemed to him, however, an extreme provision that a parent or guardian of a young person under 18 should be able to lock up a child, or ward, by simply alleging that the child was suffering from mental disorder. He doubted himself whether Clause 16 was sufficient to protect medical men. The man who brought an action against a doctor must have an exceedingly bad case if the defendant could get the action dismissed on application under Clause 16. He hoped that before the Committee stage arrived, Earl Russell might be able to devise some really substantial protection for the medical profession.

The Earl of CRANBROOK said that some noble Lords had a very poor opinion of the medical officers in charge of institutions. He could not conceive it possible that any medical officer would receive an unfortunate child into an institution who had been brought there by his parents if the child was in a completely sane condition. One point that had not been touched upon was the question of authorities being allowed to have out-patient clinics. That would be a great step in advance. He hoped the time would soon come when out-patient clinics for the treatment of incipient cases, or cases already discharged, would be established all over the country.

Reply to the Debate.

Earl RUSSELL, replying to the debate, said he regarded out-patient clinics as a very valuable feature in treatment. As to the question of protection for the medical profession the provision in the Bill was the very best that all the legal skill brought to bear on the matter could think of. But if their lordships were prepared to extend it further he did not know that he would be prepared to oppose it. As to the views put forward by Lord Brentford perhaps the noble Lord would consult with him, or, better still, with the Minister of Health, in order to see if anything could be done to adjust Lord Brentford's view with the opinion held very strongly by everyone who knew about the matter. He (Lord Russell) felt, however, that if anything too formal was insisted upon, Clause 5 would lose its entire value. He could assure noble Lords that the utmost attention would be paid to their suggestions, and the Government would welcome any assistance in making the measure a better Bill.

The Bill was read a second time.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 27TH.

Health of Public Aircraft Pilots.

Mr. LEES asked the Under Secretary of State for Air how many seaplanes were employed on the Imperial Airways' route from Genoa to Alexandria; how many pilots were available for this route; what rest period was arranged for these pilots; whether there had been any cases of sickness amongst the pilots during the last few months; and whether the Air Ministry took any steps to assure itself that pilots in public aircraft were in good health before starting on a journey.—Mr. MONTAGUE replied: I assume that my hon. friend is referring to the normal service which runs via Genoa. He is no doubt aware that that service has been temporarily suspended. For the normal route from Genoa to Alexandria three flying boats were employed and four pilots were available for the service. They were only engaged in flying duties on three days out of ten, and I understand that there was not an undue amount of sickness among the pilots during the last few months. As regards the last part, under the existing regulations, pilots of public aircraft are required to be medically examined at least every six months for the renewal of their licences, and in order to ensure the maintenance of their efficiency they are also required to be re-examined and pronounced fit before resuming air duties (*a*) whenever they have performed a total of 125 hours flying as pilot within any period of 30 consecutive days since their last medical examination, and (*b*) after illness or accident.

THURSDAY, NOV. 28TH.

Deaths from Silicosis in Sheffield.

Mr. HOFFMAN asked the Home Secretary the number of deaths from silicosis in Sheffield for the years 1928 and 1929 respectively, and the number of cases in which compensation had been paid under statutory rules and orders during the same period.—Mr. CLYNES replied: I have no accurate information in regard to the first part of this question, but it is estimated that the number of deaths from silicosis or silicosis accompanied by tuberculosis was 28 in 1928 and 35 in 1929. Compensation was paid under the Refractories Industries Scheme in 12 cases, including one fatal case, in 1928, and in ten cases, including three fatal cases, in 1929. Under the Metal Grinding Scheme there were 12 cases, including one fatal case, in 1928. Figures for 1929 are not available yet for the metal grinding industries nor for the sandstone and various industries schemes, which only came into force in the early part of this year.

Prison Doctors and Infliction of the Cat.

Mr. BENSON asked the Home Secretary the number of cases during the past three years in which, owing to the effect upon the prisoner, the prison doctor had intervened to postpone the completion of the infliction of the cat in order that the prisoner might recover sufficiently to stand the completion of the flogging; and the number of cases in which more than one postponement had been necessary.—Mr. CLYNES replied: There has been no such case in the last three years, and from inquiries made it has been ascertained that officers with over 30 years' experience of the prison service have never heard of such cases. If a medical officer stops corporal punishment his intervention is final, and there is no further corporal punishment.

Inspection of Vivisection Experiments.

Mr. FREEMAN asked the Home Secretary the number of inspectors of vivisection experiments; whether any or all of them were men who had had a medical training; whether he would consider the appointment in future of men known to be primarily interested in the welfare of animals; and whether he would appoint some women inspectors.—Mr. CLYNES replied: There are two inspectors, both of whom have had a medical training. There are no vacancies at present and no further appointments are in contemplation. Should a vacancy arise, the candidate with the best qualifications, irrespective of sex, will be appointed.

Women Medical Officers in Prisons.

Mr. LOVAT-FRASER asked the Home Secretary whether there were any women medical officers in women's prisons or sections of prisons; and, if not, whether he would consider the desirability of appointing them.—Mr. CLYNES replied: There are two women medical officers at Holloway Prison, and there is a woman medical officer at Aylesbury Borstal Institution. At other prisons where the women form only a small proportion of the prisoners, the difficulty hitherto has been that the appointment of a woman medical officer would mean adding to the staff and paying two officers to do work which can be done by one.

Sexual Offences against Young Persons.

Dr. PHILLIPS asked the Home Secretary whether he was now prepared to say what action he proposed to take to put into operation the recommendations of three departmental committees on Sexual Offences against Young Persons, on the Treatment of Young Offenders, and on Metropolitan Police Courts and Juvenile Courts respectively.—Mr. CLYNES replied: Various recommendations of these committees not requiring legislation have already been brought to the notice of the courts. Some of the recommendations have already been passed into law, while others have been noted for legislation at a suitable opportunity. As soon as the state of public business permits the Government is anxious to introduce a Bill to amend the Children Act, 1908, and the recommendations of these committees are being taken into consideration in the framing of the Bill. As regards the Committee on Metropolitan Police Courts and Juvenile Courts, its recommendations do not require legislation, and steps have been taken, or are being taken, to give effect to all of them, including the recommendations in regard to the reorganisation of the juvenile courts in London.

Decrease in Overcrowding.

Mr. SIMON asked the Minister of Health whether he had evidence as to whether the overcrowding, as revealed in the 1921 census, had in general increased or decreased since that date in the slum areas in different parts of the country.—Mr. GREENWOOD replied: I have no direct evidence on this subject, but more than a million and a quarter new houses have been completed in England and Wales since the date of the census of 1921, and this number is greatly in excess of normal requirements. It may, therefore, be assumed that overcrowding has in general decreased.

Local Authorities and the Control of Caravans.

Major OWEN asked the Minister of Health whether, in view of the difficulties which were being experienced by local authorities with respect to caravans and other similar dwellings and the permanent nature of many of these dwellings, he would introduce legislation granting local authorities more extended powers to deal with such structures.—Brigadier-General CLIFTON BROWN, Mr. COCKS, and Mr. OSWALD LEWIS asked similar questions.—Mr. GREENWOOD replied: My attention has been drawn to this matter, and I have received resolutions from a number of local authorities. I am advised that most, at any rate, of the trouble could be met if local authorities exercised more thoroughly and vigorously the powers which they now possess, and I am not satisfied that further legislation is needed. I am always pleased to give local authorities what assistance I can if they consult me on their particular difficulties.

Undulant Fever.

Lieut.-Colonel FREMANTLE asked the Minister of Health the number of cases of undulant fever in England and Wales during the last five years; if he had any evidence showing whether there was any connexion between that disease

and contagious abortion in cattle; and whether any combined research work was being carried out into the subject by his department, the Medical Research Council, and the Ministry of Agriculture.—Mr. GREENWOOD replied: Undulant fever is not notifiable in this country, and no exact figures of the number of cases which have occurred are available. I understand, however, that 14 cases have been traced as having occurred in England and Wales during the period referred to. An inquiry into this disease has been made by a medical officer of my department, and his report, which has recently been published, contains evidence, mainly from foreign sources, showing that cases of undulant fever in man have been causally related to cattle affected by contagious abortion. The whole subject is receiving careful attention by my department in coöperation with the Medical Research Council and the Ministry of Agriculture and Fisheries.

Price of Graded Milk Licences.

Brigadier-General CLIFTON BROWN asked the Minister of Health whether, in order to encourage the production of cleaner milk, he would reduce the price of licences for Certified and Grade A (T.T.) milk which the producer had now to pay.—Mr. GREENWOOD replied:—The amount of the licence fees does not exceed the special cost of administering the grading scheme, and higher prices are charged for these milks than for ordinary milk. I am not at present satisfied that there is sufficient justification for a reduction of the fees but I will consider the matter further in consultation with my right honourable friend, the Chancellor of the Exchequer, when opportunity occurs for the general revision of the Special Designations Order.

Artificial Sunlight Treatment.

Dr. FORGAN asked the Minister of Health if it was the intention of the Government to extend the facilities for the preventive administration of artificial sunlight to mothers and children; and, if so, what steps he proposed to take to overcome any shortage of medical practitioners who were qualified for such work.—Mr. GREENWOOD replied: The extension of facilities for this form of treatment is a matter in the first instance for the local authorities. I am not at present aware of any shortage of doctors who have experience of this method of treatment.

Collection of Refuse in Open Dust carts.

Mr. DAY asked the Minister of Health whether his attenion had been drawn to the manner in which rubbish and refuse was still collected in some of the London boroughs in open dust-carts; and if he would consider introducing legislation to abolish open dust-carts not only in London but in all thickly populated areas.—Mr. GREENWOOD replied: My attention has been drawn to this matter. Legislation has not up to the present been considered to be necessary. Local authorities are increasingly making use of dust-carts with covers, and are encouraged by my Department to do so. So far as London is concerned, I think it will be best to wait until the Departmental Committee on London Cleansing have made their report.

Mental Defectives.

Major GLYN asked the Minister of Health how many defectives were being administered under the Mental Deficiency Act and what was the cost to the local authorities and to the Exchequer; what was the cost of the institutions directly under the administration of the Board of Control, and to what extent local authorities contributed; and how many defectives there were under treatment at these institutions.—Mr. GREENWOOD replied: The total number of defectives maintained in institutions or under guardianship at the joint charge of local authorities and the Exchequer on Jan. 1st, 1929, was 20,359, and there were 19,606 under supervision. The total cost for the year ended on March 31st, 1929, was £1,216,820. Of this expenditure £607,301 is borne by local authorities and £609,519 by the Exchequer. In addition a relatively small number of defectives was maintained in institutions or under guardianship at the sole charge of local authorities. Particulars of the numbers and cost are not available. The total cost to the Board of Control of State institutions directly under their administration during the year ended on March 31st, 1929, was £45,045, towards which £1838 was contributed by local authorities or relatives of patients. The number of defectives under treatment at these institutions on Jan. 1st, 1929, was 785.

MONDAY, DEC. 2ND.

Grants for Surgical Appliances.

Mr. DAY asked the Minister of Pensions the number of cases during the previous 12 months in which he was able to make grants for surgical appliances out of the voluntary funds at his disposal.—Mr. F. O. ROBERTS replied: During the 12 months ended Oct. 31st, 1929, 81 grants were made from the voluntary fund for the purchase of surgical appliances.

Malaria in Bengal.

Commander BELLAIRS asked the Secretary for India whether his attention had been drawn to the increase of preventible malaria in Bengal and the recent report of Sir Malcolm Watson to the Ross Institute for an inquiry; whether he would follow the precedent of Mr. Joseph Chamberlain, who instituted an inquiry that led to the stamping out of Mediterranean fever; and whether he would immediately promote liaison work with British Guiana where a similar problem with part East Indian population had been successfully dealt with.—Mr. WEDGWOOD BENN replied: So far as I am aware there has been no increase in malaria in Bengal in recent years. I understand that Sir Malcolm Watson's suggestion was that an inquiry should be made as to whether the embankments of the Ganges Delta produce conditions favourable to malaria; and, if so, whether a remedy could be found. This matter is now engaging the attention of the Government of Bengal. I may add that a chair of malariology will be established in the new Rockefeller Institute in Calcutta.

Lieut.-Colonel FREMANTLE: Is it not a fact that no policy has yet been given out that would really reduce malaria; that it requires a great deal more inquiry; and would it not be a good thing to institute a Government inquiry with the different departments concerned with India and the Colonies generally?

Mr. WEDGWOOD BENN: That is a much wider question. I have stated what steps are being taken in India.

Medical Appointments in India.

Major GRAHAM POLE asked the Secretary for India what action the Government of India intended to take in view of the rejection by the Indian legislative assembly of the proposal of the Government to appoint a European officer of the Indian Medical Service as a whole-time commissioner of medical qualifications and standards; and whether the creation of this post was proposed as an alternative to the creation of a Government commission on medical qualifications and standards or as an expedient pending the setting up of such permanent machinery.—Mr. WEDGWOOD BENN replied: The demand for a grant for the expenses of this appointment was not rejected by the Legislative Assembly as the House was adjourned before the termination of the debate on it. The Government of India are consulting the provincial governments as to the measures to be adopted to meet the situation and to secure the continued recognition of Indian medical degrees. The creation of the post was proposed as a temporary measure pending the establishment, by legislative enactment, of an all-India Medical Council.

WEDNESDAY, DEC. 4TH.

River Pollution on Dartmoor.

Major HILLS asked the Minister of Health whether his attention had been called to the danger of pollution of the Dartmoor rivers by opening china-clay works on Dartmoor; and whether he would consider, without interfering with what might be a valuable industrial enterprise, taking measures against pollution of those rivers.—Miss LAWRENCE replied: The answer to the first part of the question is in the negative. As regards the second part, the prevention of pollution is a matter for the local authorities, and no doubt this particular case will engage their attention.

School Children and the Schick Test.

Mr. FREEMAN asked the Minister of Health by what authority local authorities imposed the Schick test against diphtheria on school children; what evidence was there that it prevented diphtheria; what instructions were issued to the parents concerning the matter; how many children were so operated on in 1928 and how many times each; and what was the cost per head of each operation.—Miss LAWRENCE replied: Local authorities do not "impose" this test on school children. Parents are invited to have their children tested, and, if desired, immunised. The procedure is entirely voluntary. Local authorities are empowered to act for this purpose with the sanction of my Department under Section 133 of the Public Health Act, 1875, or Section 77 of the Public Health (London) Act, 1891. Advice is given to parents by the local authority, but no instructions are issued. As regards the second part of the question, my right hon. friend is advised that there is abundant evidence that the practice of active immunisation, applied to persons who have been shown by the Schick test to be susceptible to diphtheria, protects such persons against the disease. My right hon. friend has no information in regard to the last two parts of the question.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg.-Comdrs. O. J. M. Kerrigan to *Vivid*, to *Comus*, and to *President*; T. Gwynne-Jones to *Fisgard*; C. J. Aveling to *Britannia*; G. H. Courtier to *President*; and E. Kennedy to *Resolution*.

Surg. Lt.-Comdr. D. H. Kernohan to *Comus*.

Surg. Lt.-Comdrs. (D.): J. L. Edwards to *Pembroke*, for R.N. Barracks, Chatham; H. J. Luck to *Fisgard*; W. E. A. Sampson to *Flora*, for R.N. Hospital, Cape of Good Hope; and D. Barker to *Effingham II*.

ROYAL NAVAL VOLUNTEER RESERVE.

Surg. Sub-Lts. to be Surg. Lts.: G. O. Barber and E. C. W. Maxwell.

Proby. Surg. Lt. W. T. R. Chapman to be Surg. Lt.

ARMY MEDICAL SERVICES.

Lt.-Col. W. P. MacArthur, R.A.M.C., Professor of Tropical Medicine, Royal Army Medical College, to be Consulting Physician to the British Army in succession to Col. J. C. Kennedy, is proceeding to India on duty.

ROYAL ARMY MEDICAL CORPS.

Maj. J. Boyd relinquishes his temp. commn. and retains the rank of Maj.

Maj. A. Irvine-Fortesque is restd. to the estabt.

Lt. (on prob.) G. F. Harrison, from the secd. list, is rest. to the estabt.

Lt. (on prob.) E. G. C. Darke is secd. under the provisions of Art. 205, Royal Warrant for Pay and Promotion, 1926.

The undermentioned Lts. (on prob.) are confirmed in their rank: E. M. Hennessy and J. M. Ryan.

REGULAR ARMY RESERVE OF OFFICERS.

The undermentioned having attained the age limit of liability to recall, cease to belong to the Res. of Off.: Col. F. F. Carroll, late R.A.M.C., and Maj. J. B. Clarke.

TERRITORIAL ARMY.

Lt. J. N. C. Ford, late R.G.A. (Spec. Res.), to be Lt.

ROYAL AIR FORCE.

J. W. H. Steil is granted a temporary commn. as a Flight Lt. (Hon. Squadron Leader).

Flying Officer J. C. Neely is promoted to the rank of Flight Lt.

Flight Lt. R. A. W. Kerr is transferred to the Reserve, Class Dii.

DEATHS IN THE SERVICES.

Surg. Lt.-Comdr. Gilbert Malise Graham, R.N. retd., whose death after a long illness was recently announced, entered the Navy as a surgeon in 1914, and was subsequently appointed to H.M. *Emperor of India*, the Flagship of Rear-Admiral A. L. Duff in the Grand Fleet. Two years later he was appointed to the Naval Hospital at Malta, where he served till after the Armistice. In 1920 he joined H.M.S. *Truro*, and during his service with the Mine-sweeping Flotilla was promoted Surg. Lt.-Comdr. He retired in 1922.

POPLAR HOSPITAL FOR ACCIDENTS.—Hitherto this institution has been almost entirely supported locally. The Port of London Authority—which provides a fast ambulance for the transport of casualties—shipping firms, factory employees and patients, all contributed to the cost of maintenance, which amounts to £22,000 a year. The hospital was founded in 1855 to deal with dock accidents, was rebuilt in 1891, and has since then been six times enlarged, but the growth of the docks and shipping business and the increase in heavy motor traffic are such that the hospital has become seriously inadequate. One fourth of the accident cases are children, and recently in one week-end eight cases of fractured skull were admitted. It is stated that the pressure upon the out-patient department is so severe that patients have sometimes to wait four or five hours for their turn; 52,000 cases are dealt with annually. The X ray apparatus has been in use for 20 years and can deal only with ordinary fractures. It is now proposed to spend £30,000 on improvements, which will include an adequate X ray installation; and an appeal is about to be made for the money.

Medical News.

UNIVERSITY OF OXFORD: *Radcliffe Travelling Fellowship.*—An examination for a Fellowship of the annual value of £300, tenable for two years, will begin on Feb. 11th.

Candidates must have passed all the examinations required for the B.A. and B.M., degrees and must not have exceeded four years from the time of passing the last examination required for the latter. The successful candidate must devote himself during his tenure of the Fellowship to the study of medical science, principally abroad. The examination papers will be set in physiology, pathology, and preventive medicine, and a subject will be proposed for an essay. There will also be a practical examination in pathology. Candidates may offer in addition a special branch of either medicine or surgery.

Application must be made to the Regius Professor of Medicine before Jan. 29th, 1930.

UNIVERSITY OF CAMBRIDGE.—On Nov. 30th the following degrees were conferred:—

M.D.—R. J. Lythgoe and H. W. Eddison.

M.B. & B.Chir.—M. D. Nosworthy, J. M. Graham, and E. A. Trim.

M.B.—Frank Goldby and J. O. W. Bland.

UNIVERSITY OF LONDON.—At recent examinations the following candidates were approved:—

DIPLOMA IN PSYCHOLOGICAL MEDICINE.

With Special Knowledge of Psychiatry.—F. T. Thorpe and Mary E. Tyars.

SOCIETY OF APOTHECARIES OF LONDON.—At recent examinations the following candidates were approved:—

MASTER OF MIDWIFERY.

Lily A. Baker, N. R. Mucadam, W. G. Richards, and G. C. Soutter.

ROSS AWARD FUND.—In supplement to his letter on p. 1171 of our last issue Sir James Barr informs us that the Government of India have contributed the sum of £2000 to this Fund. The gift brings the total to £12,682.

ROYAL INSTITUTE OF PUBLIC HEALTH.—The council of this Institute has appointed Prof. William H. Park, Director of the Bureau of Laboratories of the New York Health Department, to be Harben Lecturer for 1930, and Dame Louise McIlroy, Professor of Obstetrics and Gynæcology in the University of London, to be Harben Lecturer for 1931. The Smith Award for 1930 has been given to Dr. H. R. Kenwood, Emeritus Professor of Hygiene in the University of London. This award is made every third year to a medical officer of health "who is recognised as having done the most noteworthy work in the discharge of his official duties."

ORTHOPÆDIC HOSPITALS.—The annual report of the Shropshire Orthopædic Hospital and Agnes Hunt Surgical Home, Oswestry, records a slight falling-off in the number of child patients in consequence of the opening of children's orthopædic hospitals in different parts of the country; nevertheless 599 adults and 480 children were treated. At the end of the year Dame Agnes Hunt resigned her post as honorary superintendent. Of the income of £48,690, £41,243 was contributed by, or on behalf of, patients. An adjoining property has been purchased for use as a training college. In the school for physically defective children the junior classes are given a good grounding in the buying and selling of household goods, in specially constructed shops, with cardboard coins. The massage department gave over 30,000 treatments. During 1928 the admissions to Wingfield Orthopædic Hospital, near Oxford, numbered 338, of whom 191 were children; in addition, 65 private patients were treated; and over 18,000 out-patients were attended at the various clinics. The work increased considerably during the year, owing to increased publicity. Rebuilding is fast becoming an urgent necessity. The report of the North Staffordshire Cripples' Aid Society for the year ending March 31st last emphasises the need for a more adequate out-patient clinic and after-care centre. The special orthopædic work of the hospital is still being done, and in the coach-house and stables which were improvised for the purpose in 1918, and the work is greatly hampered by the insufficient number of beds. The orthopædic hospitals, it is pointed out, still have a nursing problem; since there is no standard, each hospital has to make the most suitable arrangements for itself.

WALSALL GENERAL HOSPITAL.—"The sheer impossibility of dealing adequately with an incessant stream of accidents" has, the annual report records, led to the erection of a new casualty department, opened in March last. There were 17,940 attendances in the orthopædic department and 7635 treatments and exposures in the X ray department.

BRISTOL HOSPITAL FOR CHILDREN AND WOMEN.—This hospital is to be enlarged at a cost of £60,000. The present building was opened in 1885, and many extensions and improvements have since been made. The proposed scheme of reconstruction includes the addition of an extra storey to two of the blocks provided with sunlight balconies for open-air treatment.

ENLARGEMENT OF WORTHING HOSPITAL.—Two new wards, forming a further instalment of the enlargement of this institution, were opened last week by Mrs. Arthur Lloyd, who has contributed £8500 towards the cost of the work. Since the extensions began in 1926 the number of beds has been increased from 46 to 78, and various improvements have been made at a cost of £42,000. The new wards (for women) contain 26 beds in place of the former nine, and new X ray and massage departments have been added.

ST. BARTHOLOMEW'S HOSPITAL, ROCHESTER.—The average cost of the 1858 in-patients admitted last year was £8 12*s.* 7*d.*; the out-patients cost 6*s.* 6*d.* each. An extension fund of £80,000 is being collected, and various extensions and improvements are in progress. A new pathological department has been provided, and there are to be new out-patient and casualty departments. Paying patients are now received at a minimum charge of three guineas a week, exclusive of medical and surgical fees.

DENTAL HOSPITAL OF IRELAND.—The annual report shows that in the twelve months under review over 18,000 patients attended, an increase of nearly 1000. Only 16 teeth were extracted without an anæsthetic. The Dublin schools sent 1075 children for treatment. Subscriptions amounted to no more than £381, "an amount not very creditable to a large city like Dublin." The Dental Branch of the United Kingdom has made a grant of £900. There are 50 students.

MANCHESTER STUDENTS' RAG.—A proposal has been made that the entire proceeds of the Annual Rag on Shrove Tuesday next year should be given for the purpose of building a new wing to the Cancer Hospital. After a full discussion the students of the University decided to leave the allocation of the funds to the Hospital Council, but have ear-marked £1000 each for the Christie Cancer Hospital, the Dental Hospital, and the North Manchester Maternity Hospital.

UNIVERSITY OF LIVERPOOL.—At the yearly meeting of the University Court on Nov. 29th the Vice-Chancellor announced that within the last six months the University had received something like £40,000 for the endowment of research—the greater part of it to be devoted to special fields. Upwards of £20,000 was to go for research in cancer and tuberculosis, another £10,000 to be devoted to research in any field of University study, and another £10,000 by various subscribers for the endowment of research in animal pathology in the severe diseases which from time to time decimated our herds of cattle.

DONATIONS AND BEQUESTS.—Mr. Alfred Hayes, of Hawkestone, Western Park, Leicester, left £2000 to the Leicester Infirmary and £1000 to the Home for Incurables, Leamington, Warwickshire.—Mr. Anthony Brown, of Pond End, Knaresborough, Yorks, left practically the whole of his estate to charitable and philanthropic objects. Amongst the bequests are £2000 to Harrogate General Infirmary to endow two beds in his name, £1000 to Royal Bath Hospital, Harrogate, and £1000 to National Institute for the Blind. The residue of the property is left between Newcastle General Infirmary, Harrogate Infirmary, and Leeds General Infirmary.—Miss Mary Ann Shelton, of Pinchbeck-street, Spalding, in addition to other bequests, left £2000 subject to a life trust equally between the London Hospital and the Cancer Hospital, Fulham-road; £1000 each to the London Hospital, Whitechapel-road, and the Cancer Hospital; £500 to the Royal Society for the Prevention of Cruelty to Animals.—Mr. John Cross, of South-drive, Harrogate, left, besides other bequests, £1000 to the York County Hospital; £200 to the Harrogate Infirmary; £100 each to the Yorkshire Home for Incurables, Harrogate, and the Rawson Convalescent Home, Harrogate.

STOCKPORT INFIRMARY.—The work of this hospital has for some time past been impeded by lack of room. Various extensions have been made, but it is still impossible to cope with the demands, and it has therefore been decided to build an entirely new hospital. A site of 14 acres has been purchased, upon which will be erected a building to hold 400 beds. The work, which will need five years for its completion, is estimated to cost £250,000. There are at present 130 beds.

BRADFORD MUNICIPAL HOSPITAL.—The report for 1928 by Mr. B. Holroyd Slater, the medical superintendent, shows that since 1920, the first year of municipal control, the number of patients admitted has increased by 86 per cent.—7176 as compared with 3804; the number of births by 314 per cent., and the number of operations by 418 per cent. Puerperal sepsis provided the largest number of cases (62 of infectious disease. There were 11 maternal deaths, 654 live births and 69 stillbirths.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Dec. 9th.—5 P.M., WAR. Paper:—Surgeon Commander A. E. Malone, R.N.: Some Remarks on the Evolution of Naval Hygiene.

TUESDAY.—5 P.M., THERAPEUTICS AND PHARMACOLOGY. Communications and discussions: Dr. J. W. Trevan, Dr. T. Izod Bennett, Dr. D. T. Davies, Dr. L. E. H. Whitby, and others: Phenylhydrazine in the Treatment of Polycythæmia. Dr. Bernard Schlesinger, Dr. F. J. Poynton, and others: Nirvanol in the Treatment of Chorea.—8.30 P.M., PSYCHIATRY. DISEASE IN CHILDREN. (Members of the Child Guidance Council will also take part in the following discussion.) Special Discussion on: The Difficult Child. Speakers: Dr. Bernard Hart, Dr. Emanuel Miller, Psychiatry. Dr. Hector Cameron, Section for the Study of Disease in Children. Dr. W. Moodie, Miss Fildes, Child Guidance Council.

WEDNESDAY.—5.30 P.M., SURGERY: SUBSECTION OF PROCTOLOGY. Pathological Meeting preceded by a Discussion on Complications of Operations for Piles, to be opened by Mr. Cecil Rowntree (President of the Subsection). Cases and Specimens:—Mr Cecil A. Joll.: Combined Abdomino-perineal Excision of the Rectum and Wertheim's Hysterectomy for Carcinoma of the Recto-vaginal Septum. Mr. Cecil A Joll: Abdomino-perineal Excision of Rectum for Endometrioma. Dr. H. J. B. Fry: Multiple Papillomatosis of the Colon with Double Primary Carcinoma of the Rectum. Dr. H. J. B. Fry: Diverticulitis with Carcinoma of the Rectum. Dr. H. J. B. Fry: Sacro-coccygeal Chordoma Simulating a Colloid Carcinoma of the Rectum. Dr. H. J. B. Fry: Colloid Carcinoma of the Rectum in a Young Subject, with Metastases in the Skull. Dr. H. J. B. Fry: Papilloma of the Rectum Removed by Perineal Excision. Dr. H. J. B. Fry: Secondary Melantoic Sarcoma of the Colon. Dr. Graham Hodgson: Cases of Diverticulitis.

THURSDAY.—8.30 P.M., NEUROLOGY. Short Papers:—Dr. James Collier: Ocular Paralysis in Diabetes. Dr. Macdonald Critchley: The Syndrome of the Anterior Cerebral Artery.

FRIDAY.—5.30 P.M., CLINICAL. (Cases at 4.30 P.M.) Dr. C. Worster-Drought: A Case of Dystrophia Myotonica. Dr. Terence East: Case of Polycythæmia Vera. Mr. Cecil P. G. Wakeley: Case of Large Chondroma of the First Rib in a Child. Dr. Harold Cookson: Specimen, Rheumatic Carditis, Pan-valvulitis. Dr. F. Parkes Weber: Combined Degeneration of the Spinal Cord, without the Blood Picture of Pernicious Anæmia. Dr. H. V. Morlock: Case of Familial Schluric Jaundice. Mr. Harold Edwards: Severe Deformity following Burns. Dr. Dorothy Hare: Case of Congenital Morbus Cordis with Ascites. Dr. E. Stolkind: Case of Abnormality of the Gall-bladder. Dr. Norman Hill: Case of Amyotonia Congenital 5 P.M., OPHTHALMOLOGY. Clinical Meeting at the Royal London Ophthalmic Hospital, City-road, E.C.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Dec. 9th.—8.30 P.M., Discussion on: The Treatment of Head Injuries. To be introduced by Mr. Wilfred Trotter.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

THURSDAY, Dec. 12th.—8.15 P.M., preceded by a Demonstration at 7.45 P.M. (at 11, Chandos-street, Cavendish-square), Prof. Warrington Yorke: Blackwater Fever.

BIOCHEMICAL SOCIETY.
FRIDAY, Dec. 13th.—3 P.M. (in St. Bartholomew's Hospital E.C.). Communications:—H. E. Archer and G. A. Harrison: The Effect of Reaction on the Heat Test for Bence-Jones' Proteinuria. W. H. Hurtley: Notes on the Determination of Iodine in Blood, &c. K. V. Thimann: The Precipitation of the Basic Amino-acids of Proteins by Phosphotungstic Acid. M. J. Rowlands and B. Wilkinson: Vitamin Content of Grass Seeds in Relationship to Manures. A. G. Norman: The Biological Decomposition of Plant Materials. D. R. P. Murray and C. G. King: The Stereochemical Specificity of Esterases. H. Chick and M. H. Roscoe: Stability to Heat of Vitamin B2 (Anti-dermatitis, Anti-pellagra). F. K. Herbert and M. C. Bourne: The Non-glucose Reducing Substances of Blood with Special Reference to Glutathione. B. W. Town: Isolation of Isoleucine from Gliadin. H. G. Reeves and E. T. Renborn: Some Properties of Dihydroxyacetone. J. M. Gulland and R. A. Peters: Observations on the Reducing Substances in Avian Blood. G. Graham: The Presence of Homogentisic Acid in the Blood of Patients with Alkaptonuria.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, London, W.
MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W. Mon., 5 P.M., Lecture by Mr. John O'Malley: Inflammations of the External Ear. No fee.—NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W. Wed., 6 P.M., Demonstration by Dr. T. F. Cotton. No fee.—SOUTH LONDON HOSPITAL FOR WOMEN, 103, South Side, S.W. Wed., 2.30 P.M., Demonstration by Miss Huxley (General). Open to women graduates only. No fee.—INFANTS HOSPITAL, Vincent-square, S.W., Afternoon Course, second week.—LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W., Practitioners' Course, second week.—Further particulars from the Fellowship of Medicine.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.
MONDAY, Dec. 9th.—10 A.M., Dr. Dowling: Skin Department. 11 A.M., Mr. Tyrrell Gray: Surgical Wards. 2 P.M., Mr. Sinclair: Surgical Wards.
TUESDAY.—10 A.M., Medical Registrar: Medical Wards. 2 P.M., Dr. Shaw, Medical Out-patients. 2.30 P.M., Sir Henry Simson: Gynæcological Operations.
WEDNESDAY.—10 A.M., Dr. Burnford: Medical Wards. 2.30 P.M., Mr. Donald Armour: Surgical Wards. Dr. Scott Pinchin: Medical Out-patients.
THURSDAY.—11.30 A.M., Mr. Simmonds: Demonstration of Fractures. 2 P.M., Mr. Bishop Harman: Eye Department. 2 P.M., Mr. MacDonald: Genito-Urinary Department.
FRIDAY.—10 A.M., Dr. Pritchard: Medical Wards. 12 noon, Dr. Shaw: Clinical Demonstration. 2 P.M., Mr. Vlasto: Throat, Nose and Ear Department.
SATURDAY.—9 A.M., Mr. Vlasto: Throat, Nose and Ear Operations. 9.30 A.M., Dr. Burnford: Bacterial Therapy Department. 10 A.M., Dr. Owen: Medical Children's Department.
Daily, 10 A.M. to 5 P.M., Medical, Surgical and Special Out-patients, Operations, Ward Visits, Anæsthetic Courses.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Dec. 9th.—2.30 to 5 P.M.: Medical, Surgical, and Gynæcological Clinics. Operations.
TUESDAY.—2.30 to 5 P.M.: Medical, Surgical, Ear, Nose and Throat Clinics. Operations.
WEDNESDAY.—2.30 to 5 P.M.: Medical, Skin, and Eye Clinics. Operations.
THURSDAY.—11.30 A.M.: Dental Clinics. 2.30 to 5 P.M.: Medical, Surgical, Nose, Throat and Ear Clinics. Operations.
FRIDAY.—10.30 A.M.: Throat, Nose and Ear Clinics. 2.30 to 5 P.M.: Surgical, Medical, and Children's Diseases Clinics. Operations. 4.30 P.M.: Demonstration on Practical Neurology by Dr. L. R. Yealland.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.
MONDAY, Dec. 9th.—5 P.M., Mr. J. C. Dawes, M.I.Mech.E.: Disposal of Refuse.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL, Denmark Hill, S.E.
THURSDAY, Dec. 12th.—9 P.M., Dr. T. East: The Electrocardiograph and its Use: A Practical Demonstration.

SOUTH-WEST LONDON POST-GRADUATE SOCIETY, St. James's Hospital, Ouseley-road, Balham, S.W.
WEDNESDAY, Dec. 11th.—4.P.M., Mr. E. T. C. Milligan: Modern Methods of Diagnosis of Rectal Diseases.

ROYAL ANTHROPOLOGICAL INSTITUTE.
WEDNESDAY, Dec. 11th.—5.30 P.M. (in the Polytechnic Hall Extension, Great Titchfield-street, W.), Prof. F. G. Parsons: The Anthropological History of the Modern Englishman.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Dec. 13th.—4 P.M., Dr. Dan McKenzie: Early Mastoid Operations.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Dec. 10th.—5 P.M., Dr. S. E. Dore: Erythemato-squamous Eruptions.
THURSDAY.—5 P.M., Dr. W. N. Goldsmith: Pigmentation of the Skin.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.
WEDNESDAY, Dec. 11th.—4.15 P.M., Clinical Meeting. Cases will be demonstrated in the wards. Tea at 4 P.M. Medical Practitioners invited.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.
WEDNESDAY, Dec. 11th.—4 P.M., Prof. Winifred Cullis: Speed as a Psycho-Physiological Factor in the Life of To-day.

PEOPLE'S LEAGUE OF HEALTH, 12, Stratford-place, W.
FRIDAY, Dec. 13th.—6 P.M. (at the Medical Society of London, 11, Chandos-street, W.), Dr. R. O. Moon: The History of Medicine and the Part Played by the British Race.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, Dec. 10th.—4.15 P.M., Mr. W. H. Hey: Post-operative Embolism.

ANCOATS HOSPITAL, Mill-street, Manchester.
THURSDAY, Dec. 12th.—4.15 P.M., Dr. E. W. Twining: X Ray Treatment of Hyperthyroidism and Blood Diseases.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
FRIDAY, Dec. 13th.—3.30 P.M., Mr. G. Simpson: Cystoscopy.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.
WEDNESDAY, Dec. 11th.—4.15 P.M. (in the Victoria Infirmary), Dr. A. McLachlan: Skin Cases.

Appointments.

GALLOWAY, R. M., M.D. Edin., D.P.H., has been appointed Medical Officer of Health, Dewsbury.

MACKENZIE, J. J. R., M.B., Ch.B. Edin., Certifying Surgeon under the Factory and Workshop Acts at King's Cliffe, Northampton.

MASSEY, A., M.D. Leeds, D.P.H., Medical Officer of Health for Coventry.

Bolingbroke Hospital: CAREW-SHAW, E., M.R.C.S, L.R.C.P. Lond., Clinical Assistant Ear, Nose and Throat Department: WALKER, G. B. W., M.B., B.Chir. Camb., F.R.C.S., Resident Medical Officer.

Vacancies.

For further information refer to the advertisement columns.

All Saints' Hospital, 91, Finchley-road, N.W.—Hon. Radiologist. Hon. Surg. Reg. Also Two H.S.'s. Each at rate of £150.
Barnet, Herts, Wellhouse Hospital.—Obst. Res. and Asst. M.O. At rate of £250.
Barnsley, Beckett Hospital and Dispensary.—H.P. £140.
Bolingbroke Hospital, Wandsworth Common, S.W.—Hon. Anæsthetist.
Brighton County Borough Infectious Disease Hospital, &c.—Res. M.O. £350.
Brighton, New Sussex Hospital for Women and Children.—Radiologist.
Bristol General Hospital.—Surgeon, Asst. S., Asst. P., Clin. Assts., Dental S. Also Pathologist. All Honorary.
Bristol Royal Infirmary.—H.S. to Ear, Nose and Throat Dept. At rate of £60.
Burnley, Victoria Hospital.—H.S. At rate of £125.
Cairo, Egyptian University, Faculty of Medicine.—Two Surgical Tutors. £E35 monthly.
Canterbury, Kent and Canterbury Hospital.—H.P. £125.
Cardiff, Prince of Wales' Hospital.—Res. Surg. £350.
Carlisle, Cumberland Infirmary.—Pathologist and Bacteriologist. £900.
Chelsea Hospital for Women, Arthur-street, S.W.—Pathologist. £40.
Chester, Wrenbury Hall Tuberculosis Training Colony.—Res. H.P. £250.
Dorchester, Dorset Mental Hospital, Herrison.—Jun. Asst. M.O. £300.
Dreadnought Hospital, Greenwich.—Med. Supt. £300.
Eastbourne, Princess Alice Memorial Hospital.—Jun. H.S. At rate of £100.
Eccles Hospital for Children Southwark, S.E.—H.S. At rate of £120.
Exeter, Royal Devon and Exeter Hospital.—Sen. H.S. £250. Also Hon. Asst. Phys.
Greenock Royal Infirmary.—Two H.S.'s. Each £100.

Grocers' Company, Grocers' Hall, E.C.—Research Scholarships. £300.
Guildford, Royal Surrey County Hospital.—H.S. £150.
Hampshire County Council.—Asst. County M.O. £600.
Hove Hospital, Sackville-road.—Res. M.O. £150.
Huddersfield Royal Infirmary.—Res. Surg. O. £220.
Hull Royal Infirmary.—Second H.S. At rate of £150.
Italian Hospital, Queen-square, W.C.—Two Hon. Surgeons.
Leamington Spa, Warneford General Hospital.—Res. H.S. £165.
Leeds Jewish Herl-Mosser Hospital.—Res. M.O. £100.
Liverpool Hahnemann Hospital.—H.S. At rate of £100. Also Hon. Path. £25.
Liverpool Sanatorium, Delamere Forest, Frodsham.—Asst. Med. Supt. £250.
London Lock Hospital, Dean-street and Harrow-road, W.—Second Anæsthetist. 1 guinea each attendance.
London University.—Geoffrey Duveen Travelling Studentship. £450.
Manchester Ancoats Hospital.—Asst. Pathologist. Also Med. Reg. and Surg. Reg. Each £100.
Manchester, Baguley Sanatorium.—Sen. Asst. M.O. £500.
Manchester, Salford Royal Hospital.—Res. Surg. O. £200. Also two Res. H.S.'s to special departments. Each at rate of £125.
Metropolitan Hospital, Kingsland-road, E.—Asst. S. Also Two Anæsthetists.
Newark Hospital and Dispensary.—Res. H.S. At rate of £150.
Nuneaton Borough.—Asst. M.O.H. £600.
Rochester, St. Bartholomew's Hospital.—Third Res. M.O. At rate of £175.
Royal London Ophthalmic Hospital, City-road, E.C.—Asst. Surgeon.
Royal Northern Hospital, Holloway, N.—H.S. At rate of £70.
Ryde, Royal Isle of Wight County Hospital.—Res. H.S. £180.
St. Leonards-on-Sea, Buchanan Hospital.—Sen. and Jun. H.S.'s. £175 and £125 respectively.
Salisbury General Infirmary.—Two H.S.'s.
Scotland Dept. of Health, Bacteriology and Medical Statistics.—M.O.'s. £600.
Sheffield Royal Hospital.—Res. Anæsthetist. At rate of £80.
Sheffield Royal Infirmary.—H.P., H.S., Ophth. H.S., Asst. Ophth. H.S. Also Asst. Cas. O. Each at rate of £80.
Stafford, Staffordshire General Infirmary.—H.S. and H.P. At rate of £200 and £150 respectively.
Westminster Hospital, Broad Sanctuary, S.W.—Asst. Pathologist. £250.
Wigan Infirmary.—Third H.S. £150.
Winchester, Royal Hampshire County Hospital.—Hon. Clin. Asst. for Ophth. Out-Patient Dept. Also Sen. Res. M.O. £200. H.S. £150.
Windsor, King Edward VII. Hospital.—Two H.S.'s. Each £100.
The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Windermere (Westmorland) and Wirksworth (Derby).

Births, Marriages, and Deaths.

BIRTHS.

ATKINSON.—On Nov. 28th, at Grosvenor-street, W., the wife of Dr. C. Hewitt Atkinson, of a son.
BELFRAGE.—On Nov. 30th, at 15, Somers-place, W.2, to Judith, wife of Dr. Douglas Belfrage—a son.
BROWNING.—On Nov. 28th, at Courtfield-gardens, the wife of Basil Browning, M.D., of a son.
JACOBS.—On Nov. 30th, at Maida Vale-mansions, W., to Dr. Elizabeth Jacobs, wife of Dr. L. Jacobs, of a daughter.
ROXBURGH.—On Nov. 26th, at Redington-road, Hampstead, the wife of A. C. Roxburgh, M.D., F.R.C.P., of a son.
SWAINE.—On Nov. 28th, at Beaumont-street, W., the wife of Dr. R. O. Swaine, Bedford House, Bognor, of a daughter.

MARRIAGES.

FERGUS—SMITH.—On Nov. 30th, Andrew Naismith Fergus, M.B., Ch.B., to Jean Elizabeth, elder daughter of Gilbert Smith, M.D., F.R.C.S., and Mrs. Smith, of Hindhead.
O'FLYNN—LEONARD.—On Nov. 26th, at Corpus Christi Church, London, by the Rev. Father E. O'Flynn, Surgeon-Commander J. A. O'Flynn, R.N., to Lynda Avis Lilian Leonard.

DEATHS.

BURKITT.—On Nov. 23rd, at Warneford House, Ravenstone, Leicestershire, after four days' illness, John Colley Smyth Burkitt, M.D.
BYRON.—On Nov. 25th, at "Bellgrove," Gunterstone-road, West Kensington, London, John Lean Byron, L.D.S. R.C.S. Edin.
COCKBURN.—On Nov. 26th, the Hon. Sir John Alex. Cockburn, K.C.M.G., M.D., aged 79.
DAVIES.—On Nov. 24th, Dr. Arthur Templer Davies, aged 71.
DEWAR.—On Nov. 27th, at Edinburgh, Thomas Finlayson Dewar, C.B., M.D., D.Sc., Department of Health for Scotland, aged 63.
MONTGOMERY.—On Nov. 28th, at Roebuck Park, Dundrum, Co. Dublin, Edward Hugh Montgomery, M.D., of Careysville, Fermoy, Co. Cork, aged 60.
SLOGGETT.—On Nov. 27th, suddenly, Lieut.-General Sir Arthur Sloggett, K.C.M.G., K.C.V.O.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices o Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

THE MECCA PILGRIMAGE, 1929.

A DOCTOR standing on the banks of the Suez Canal near Ismailia in June, 1929, saw a ship approaching from the south with a marked list to port. When she drew abreast of the watcher she proved to be a pilgrim ship; the afternoon being hot, the travellers had all crowded to the port side to catch what little wind was stirring. Their numbers were so great that they appeared to cover all the deck space, while the ship was unable to right herself from the list produced by their weight. It is hard to imagine the conditions on a ship so grossly overcrowded, especially when oriental standards of cleanliness are taken into consideration; moreover, the passengers generally prepare their own food, and latrine accommodation is none too plentiful on pilgrim ships.

The Egyptian Government has been making a determined effort this year to provide better conditions for pilgrims visiting Hedjaz. The "Khedivial Mail Line" received the concession for the transport of pilgrims, and the results of examination of their boats by the Egyptian authorities appears to have been satisfactory. The largest of these was authorised to take 1505 pilgrims and the smallest 742. The Egyptian authorities advise, however, that 1500 should be the highest number ever carried in future. They cite as an example of overcrowding the case of the *Plata*, a boat of another line, which carried 2000 passengers and three medical officers. Aboard this ship seven persons died between Djeddah and Tor; 11 were in hospital on arrival, four of whom were moribund; 51 were sent into hospital at Tor, of whom nine died. It is thought that the ship was short of provisions as a result of carrying a consignment of strange pilgrims before returning to pick up those for whom it had been chartered, and it is suggested that ships should not be authorised for such usage in future. The conditions on another ship, the *Riad*, were found to be extremely unsatisfactory; there was accommodation for only 363 pilgrims but 431 were taken; there was a lifeboat capacity only for 90 persons; washing and sanitary arrangements were hopelessly insufficient; the wireless apparatus consisted of a receiver only, and there was no operator on board. This ship was suspended from further transport of pilgrims by the Director of the Quarantine at Tor.

Attempts are now being made to vaccinate all pilgrims and to inoculate them against cholera before they reach Hedjaz. This year nearly all the pilgrims from the north received both forms of protection, as did those from the south who passed the island of Kamaran. Pilgrims from South and East Africa and from Yemen, Assyt, and Hadramout arrive in small groups, not by pilgrim ships, and probably receive neither vaccination nor inoculation. The problem of suitable protective measures is difficult to solve in view of the large numbers involved; this year it is estimated that 120,000 persons were present on the plains of Arafat on the first day of the feast. Statistics from Hedjaz are naturally difficult to obtain; the deaths from small-pox and dysentery show an increase this year over those recorded in 1928, but this may be because they have been more carefully observed. The water-supply to the pilgrims, which has sometimes been insufficient at Hedjaz, was plentiful this year as a result of a rainy winter. Condensers are available at Djeddah and Yamba.

There can be no doubt that the quarrantine arrangements at Tor, which include a hospital and an efficient medical and nursing staff, do much to prevent epidemics following the return of pilgrims to their homes. This year 29,358 persons passed through the settlement; only 43 deaths are recorded and autopsies were performed in all cases; six of these died of dysentery and two of typhoid; none of typhus, small-pox, or cholera. The stools of all cases receiving medical treatment were examined for the cholera vibrion. The danger to pilgrims from infected persons joining the pilgrimage from areas in which epidemics are in progress is considered in the report of the Conseil Maritime et Quarantenaire d'Egypte for 1929. Epidemics of small-pox occurred in Iraq and the Sudan between October, 1928, and April, 1929; there was a small epidemic of plague in Upper Egypt and a larger one (161 cases) in Morocco. There were 653 cases of typhus in Egypt and 32 in Palestine during the same period.

The yearly pilgrimage will remain a danger to all the countries from which pilgrims are drawn as long as the conditions of transport and accommodation remain as scanty and unhygienic as at present. Efficient reorganisation of the pilgrimage in every direction is needed and should be facilitated by the governments of the large number of countries involved.

ENLARGEMENT OF A DUBLIN HOSPITAL.

Jervis-street Hospital is the oldest of the Dublin voluntary hospitals, having entered its third century some 11 years ago. It was originally founded in Cook-street by six surgeons, and its rapid success caused its removal two years later to the Inns Quay, where the Four Courts now stand. When the site was wanted for the erection of the Four Courts nearly 60 years later, the governors bought the town house of the Earl of Charlemont in Jervis-street, and occupied it from 1786 to 1803, when it was replaced by a more commodious building. This in turn was replaced in 1887 by the present hospital. Various additions have since been made, of which the most important were a new out-patient department in 1910, and a new theatre block in 1919. Last week the Archbishop of Dublin opened a new wing, which contains a chapel, and improved accommodation for the Sisters of Mercy, who control the nursing, and for the resident staff. The hospital is now very thoroughly equipped in accordance with modern ideas. It is situated in the heart of the city, surrounded by many industrial works and crowded tenement areas. It deals, therefore, both with an exceptionally large number of accidents and with much sickness among the very poor. It is gratifying that the governors and medical staff are actuated by a progressing spirit.

MEDICAL PROGRESS IN CEYLON.

In the annual general report for 1928, the section devoted to public health begins with the gratifying assurance that "there are few countries in the world in which medical aid is more generously distributed by the State than Ceylon." In proof of this it is mentioned that there are 101 government hospitals and asylums with provision for 10,250 beds. In Colombo, the capital, are situated a general hospital with 850 beds, an ophthalmic hospital, a lying-in home, a hospital for women (Lady Havelock Hospital), a hospital for children (Lady Ridgeway's Hospital), a bacteriological institute, a Pasteur institute, a dental institute, and a home for incurables. At Angoda, six miles from Colombo, there is a hospital for infectious diseases, with 122 beds. There are special dispensaries at Kandy, Galle, Jaffa, and Batticola for the treatment of eye diseases. There is a lunatic asylum at Angoda and two leper asylums—one at Hendala in the Western Province and one at Mantivu in the Eastern Province. As regards the prevention of tuberculosis, in Colombo there is the King Edward VII Ante-Tuberculous Institute, at Kandana there is a sanatorium of 72 beds, and at Ragama there is a hospital for chronic cases. In addition to government hospitals, the owners of estates have provided 81 estate hospitals. There are also 575 central and branch dispensaries provided by government, and 684 estate dispensaries.

A Year's Work.

Dealing with the work of the year, the report states that the campaign against ankylostomiasis was continued, and in addition to the treatment afforded to the general public at hospitals and dispensaries throughout the island, 107,435 school-children and 124,336 estate coolies were treated by medical officers of the campaign staff. The activities of the anti-malaria campaign also were maintained at Chilan, Kurunegala, Anuradhapura and Trincomalee. An ordinance for the prevention of mosquito-breeding has been placed before the Legislative Council. Quinine was distributed very widely throughout the island. The number of persons treated at the Pasteur institute was 1448.

During the year there were in Colombo 40 cases of plague, 37 of which were fatal, this being the second lowest number of cases of death on record since the first appearance of plague in 1914. Out of the 40 cases, 27 were of the bubonic type and 13 of the septicæmic. All the septicæmic cases proved fatal, while the three recoveries were among those suffering from the bubonic type. Plague broke out in Kandy in the last quarter of 1927, and before the end of the year there were altogether 30 cases (26 fatal). By the beginning of 1928 the disease was got under control, and there were only eight further cases (six fatal). There were five cases of cholera in the island, of which four were fatal, compared with 11 cases and six deaths in 1927. There were 16 cases of small-pox with one death, as against 27 cases and five deaths in 1927.

Vital Statistics.

The estimated population of Ceylon on Dec. 31st, 1928, was 5,421,861. The total number of arrivals during the year amounted to 289,762, and of departures to 237,670. Of the former, 93 per cent. came from India, and of the latter, 92 per cent. were bound for India. The racial distribution of the population was, at the time of the last census (1921) as follows:—Europeans, 8118; Burghers and Eurasians, 29,439; Sinhalese, 3,016,145; Tamils, 1,120,059; Moors, 284,964; Malays, 13,402; others, 26,469. The births registered during the year numbered 213,311 (108,841 males and 104,470 females), being higher than the number registered in any previous year since registration was introduced. The birth-rate was equal to 40·0 per 1000 of the estimated population, as against 39·5 in the preceding year, and 38·8 the average for the ten years 1918-1927. The deaths of 123,337 persons were registered in 1928, as against 113,853 in 1927, and 138,853 the average for the previous ten years. The death-rate for 1928 was equal to 24·8 per 1000 of the estimated population, and 3·1 per 1000 higher than that recorded in 1927. The average for the past decade was 28·5. The number of infant deaths in 1928 was equal to a rate of 177 per 1000 births, as against 160 in 1927, and 188 the average for the past ten years. The birth-rate in Ceylon is very high compared with that prevailing in some western countries. The infant mortality-rate is greatly influenced by the birth-rate, so that it is not an unusual feature to find a high infant mortality-rate in countries that have high birth-rates and a low infant mortality-rate in countries that have low birth-rates. Though the Ceylon rate when judged by the standards of advanced western countries appears to be unsatisfactory, there is not much cause for apprehension when the climatic and other conditions in the island are taken into account.

Causes of Death.

The classification of causes of death is based on the international or Bertillon system. This was originally introduced into Ceylon in 1911, and has since undergone a revision. The revision, which is that of 1920, has been in use here for the last two years only. Owing to the absence of compulsory certification of causes of death among a very large section of the population, the statistics, particularly of diseases requiring scientific knowledge for diagnosis, are of doubtful value, but there is reason to believe that a definite though slow progress in accuracy is achieved every year. Owing to lack of certification a very large number of deaths appear under the heading "pyrexia," which is admittedly a vague cause of death. This cause, which includes all cases of fever not otherwise defined, was stated in the deaths of 18,954 persons—or 14 per cent. of the total deaths. In the previous year 13,502 deaths were registered under the cause. There is no doubt that a considerable number of the deaths so registered were actually due to malaria, but in the absence of their being so stated in the returns by village registrars, the deaths are classified under the general heading "pyrexia." Another prolific cause of death in the island is infantile convulsion, from which during the year under review there were 16,042 deaths—or 12 per cent. of the total deaths. The death-rates from some of the more important diseases registered in Ceylon in 1928 as per million of the estimated population were:—pyrexia, 3553; infantile convulsions, 3007; pneumonia, 1658; diarrhœa and enteritis, 1655; dysentery, 646; phthisis, 634; malaria and malarial cachexia, 420; premature birth and congenital defects, 419; ankylostomiasis, 405; influenza, 367; puerperal septicæmia, 264; bronchitis, 239; enteric fever, 108; cancer, 103.

REGIMENTAL COLOURS OF THE INDIAN ARMY.

To the Editor of THE LANCET.

SIR,—I am collecting information regarding the regimental colours, past and present, of the Indian army, and should be particularly grateful if any of your readers could assist me in tracing some flags once in the possession of a Surgeon-Major Newton, who lived at Cheltenham many years ago.

I am, Sir, yours faithfully,

H. BULLOCK (Capt.).

East India United Service Club, St. James's-square, S.W., Dec. 3rd, 1929.

ROYAL SAMARITAN HOSPITAL FOR WOMEN, GLASGOW.

THIS hospital is to be congratulated on its first medical report. The period covered is from April 1st to Dec. 31st, 1928, during which time 2033 in-patients were treated and 1836 operations were performed. The classification of cases is done clearly on pathological lines and it should have considerable statistical value; a useful distinction is made between parous and nulliparous patients. It is hoped that the governors of the hospital will make the production of this report an annual event.

Dr. R. M. B. MacKenna desires to state that the public advertisements issued in the Seacombe district of Liverpool last week with regard to a lecture on a "lay" topic which he delivered on Nov. 24th, were issued without his knowledge or consent, and that he demanded their immediate obliteration within half an hour of learning of their publication.